European Food Safety Authority

ZOONOSES MONITORING

SPAIN

The Report referred to in Article 9 of Directive 2003/99/EC

TRENDS AND SOURCES OF ZOONOSES AND ZOONOTIC AGENTS IN HUMANS, FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

including information on foodborne outbreaks, antimicrobial resistance in zoonotic agents and some pathogenic microbiological agents.

IN 2013

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: Spain

Reporting Year: 2013

Laboratory name	Description	Contribution
Subdireccion General de Sanidad e Higiene Animal y Trazabilidad	Ministerio de Agricultura, Alimentación y Medio Ambiente	Reporting Officer
Subdireccion General de Coordinacion de Alertas y Programacion de Control Oficial	Agencia Española de Seguridad Alimentaria y Nutricion	National Reporter
Centro Nacional de Epidemiologia	Instituto de Salud Carlos III.Ministerio de Economia y Competitividad.	National Reporter
Subdireccion General de Medios de Produccion Ganaderos	Ministerio de Agricultura, Alimentacion y Medio Ambiente	National Reporter
Servicios de Sanidad Animal	Consejerias de Agricultura y Ganaderia de las Comunidades Autonomas	National Reporter

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/99/ EC*. The information has also been forwarded to the European Food Safety Authority (EFSA).

The report contains information on trends and sources of zoonoses and zoonotic agents in Spain during the year 2013 .

The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given. The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.

The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.

The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.

The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

---

* Directive 2003/ 99/ EC of the European Parliament and of the Council of 12 December 2003 on the monitoring of zoonoses and zoonotic agents, amending Decision 90/ 424/ EEC and repealing Council Directive 92/ 117/ EEC, OJ L 325, 17.11.2003, p. 31

List of Contents

1. ANIMAL POPULATIONS

The relevance of the findings on zoonoses and zoonotic agents has to be related to the size and nature of the animal population in the country.

A. Information on susceptible animal population

Sources of information

REGA (National Register for Livestock Holdings) was the source for the total number of holdings and animals in all species. The figures in this report were taken at December/31/2013.

Dates the figures relate to and the content of the figures

Number of holdings and animals: 31/12/2013

Definitions used for different types of animals, herds, flocks and holdings as well as the types covered by the information

'holding' in REGA means 'Whatever place where farming animals are'. They are classified in breeding and production holdings and special holdings (such as markets, slaughterhouses, quarantine centers, ...). It have been taken into account only breeding and production holdings.

The specific definitions adopted by REGA for different types of holdings are those fixed in EU or Spanish Regulations.
Bovine animals
Calves for slaughter: Bovine animals less than 1 year old for slaughter as calves.
Calves: Domestic animals of the bovine species, of not more than 300 kg live weight and not yet having permanent teeth.
Heifers: Female bovines more than 1 year old that have not yet calved.

Heifers for breeding purposes: Heifers raised for breeding and intended to replace dairy cows.
Cows: Female bovines that have calved
Dairy cows: Cows kept exclusively or principally for the production of milk for human consumption and/or dairy produce.
Meat production animals: bovine animals, other than calves, kept exclusively for the production of meat and including cows, heifers and bulls

Sheep: Domestic animals of the species Ovis.
Ewes and ewe lambs put to the ram: Females of the ovine species which have already lambed at least once as well as those which have been put to the ram for the first time.
Milk ewes: Ewes which are kept exclusively or principally to produce milk for human consumption and/or for processing into dairy products. This includes cast milk sheep (whether fattened or not between their last lactation and slaughtering).
Other ewes: Ewes other than milk ewes; to be included in meat production animals
Lambs: Male or female sheep under 12 months old

Goats: domestic animals of the species Capra.

Pigs: Domestic animals of the species Sus.

Table Susceptible animal populations

* Only if different than current reporting year

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Cattle (bovine animals)	meat production animals	87226				1938439			
	dairy cows and heifers	22857				774476			
	calves (under 1 year)	23001				1730400			
	mixed herds	7993				35965			
	- in total	141077				4479280			
Deer	farmed - in total	253							
Ducks	meat production flocks	101				310672			
	laying ducks	10				104			
	- in total	111				310776			
Gallus gallus (fowl)	breeding flocks for egg production line - in total	336				12633572			
	breeding flocks for meat production line - in total	220				5688708			
	parent breeding flocks for egg production line	58				772814			
	parent breeding flocks for meat production line	345				5688708			

Table Susceptible animal populations

Animal species	Category of animals	Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
		Data	Year*	Data	Year*	Data	Year*	Data	Year*
Gallus gallus (fowl)	grandparent breeding flocks for egg production line	8				660			
	grandparent breeding flocks for meat production line	32				271243			
	laying hens	1110				42604736			
	broilers	5013				241478761			
Geese	meat production flocks	36				1838			
	laying geese	12				7073			
	- in total	48				8911			
Goats	meat production animals	55929				2152515			
	milk goats	7519				607129			
	- in total	64171				2759644			
Pigs	breeding animals	3924				3978330			
	fattening pigs	46268				16097788			
	mixed herds	17135				654325			
	- in total	67630				22772370			

Table Susceptible animal populations

		Number of herds or flocks		Number of slaughtered animals		Livestock numbers (live animals)		Number of holdings	
Animal species	Category of animals	Data	Year*	Data	Year*	Data	Year*	Data	Year*
Sheep	meat production animals	89524				9612774			
	milk ewes	8483				6960974			
	- in total	108022				16573748			
Solipeds, domestic	horses - in total	184538				669431			
Turkeys	meat production flocks	667				5189453			
	parent breeding flocks	11				87772			
	laying hens	8				1009			
	- in total	686				5278234			
Wild boars	farmed - in total	315							

2. INFORMATION ON SPECIFIC ZOONOSES AND ZOONOTIC AGENTS

Zoonoses are diseases or infections, which are naturally transmissible directly or indirectly between animals and humans. Foodstuffs serve often as vehicles of zoonotic infections. Zoonotic agents cover viruses, bacteria, fungi, parasites or other biological entities that are likely to cause zoonoses.

2.1 SALMONELLOSIS

2.1.1 General evaluation of the national situation

A. General evaluation

History of the disease and/or infection in the country

Salmonellosis is the second main zoonoses (in number of human cases) in European Union, also in Spain. Salmonella is the agent more frequently involved in foodborne outbreaks in Spain.
In poultry, after the introducion in the 60's of the american production method, the especific pathology of avian salmonellosis was caused by S. pullorum and S. gallinarum. In the middle of the 80's come up a new infection in breeding flocks for meat production caused by S. enteritidis, and following it, also in laying hens and in feed S. enteritidis was isolated.

National evaluation of the recent situation, the trends and sources of infection

Nowadays the sources of infection are widespread along the food chain: feed, animals, food(eggs and ovoproducts, meat)and humans can be a source of infection.
At animal level, data in breeding flocks for Salmonella spp are(from 2.93% in 2012 to 0.78 in 2013) and of top 5 serovars (from 0.12% in 2012 to 0.39 in 2013). Spain have reached the community target in 2013.
In layin hens, flock incidence decreased from 11.78% to 8.76 %(Salmonella spp.) and SE/ST decreased from 2.2% in 2012 to 1.87 % in 2013(adult flocks).
In broiler flocks, the flock prevalence increased from 2.22% in 2012(Salmonella spp.) to 3.2% in 2013, but the prevalence of S. Enteritidis and S,Typhimurium decreased from 0,07% in 2012 to 0.06% in 2013

Data indicate that prevalence is deceasing in poultry in Spain, with the implementation of control programmes.

At human level salmonellosis is a notifiable disease according to Royal Decree 2210/1995, laying down Epidemiological Surveillance National Network

According to Royal Decree 328/2003, laying down the Poultry Health Plan, all veterinarians have to notify to the Competent Authority cases of zoonoses and zoonotic agents.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

It is very difficult to establish the relevance of the data in the different steps of the food chain as sources of infection, because epidemiology of salmonellosis is very complex.

Nevertheless, human cases are mainly linked to eggs and egg derived food consumption.

Recent actions taken to control the zoonoses

Ministry of Agriculture, Food and Environment and Ministry of Health, Social Policy and Equality of Spain are carrying out a Control Programme of Salmonella in poultry, eggs and ovoproducts along the overall food chain, starting with monitoring systems at holdings(National Surveillance Programme).

Additional information

Spanish legislation on Salmonella in foodstuff:
Royal Decree 1254/1991 of August 2, laying down rules to preparation and conservation of mayonnaise prepared in the own stablishment and for immediat consumption foods with eggs as ingredient.
Royal Decree 3484/2000 of december 29, laying down hygiene rules to elaboration, distribution and commercialisation of ready-to-eat food
Royal Decree 640/2006, of May 26, 2006, laying down specific implementation conditions of the Communities rules concernig hygiene subjets, as well as foodstuff's production and commercialisation.

2.1.2 Salmonellosis in humans

A. Salmonellosis in humans

Reporting system in place for the human cases

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system. During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain. In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.

All practising doctors are obliged to notify, both those in the public health service and in private practice, and both those practising outside and within hospitals. On occasions the appearance of cases and outbreaks is detected by other means (from the mass media, from citizens complaints, etc.) and in these cases the information is checked and if confirmed it is incorporated into the system at the corresponding level.

Microbiological Information System
The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc.

National Reference laboratory

Outbreak reporting
In Spain outbreaks are a complementary source of information for the foodborne diseases

Case definition

Decision No. 2012/506/EC

Diagnostic/analytical methods used

Decision No. 2012/506/EC

Notification system in place

Royal Decree 2210/1995, December 25, by Epidemiological Surveillance National Net is created.

History of the disease and/or infection in the country

Salmonellosis is the second main zoonoses (in number of human cases) in Spain.
Salmonella is the agent more frequently involved in foodborne
outbreaks in Spain.
In 2012 the Microbiological Information System have recorded 4.181 human cases

National evaluation of the recent situation, the trends and sources of infection

The number of human cases reported to the Microbiological Surveillance System shows a stable trend in recent years although this year has been shown a slight increase.
In 2012 the number of human cases reported was 4181.

Relevance as zoonotic disease

High

2.1.3 Salmonella in foodstuffs

A. Salmonella spp. in broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The activities are made pursuant to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

B. Salmonella spp. in pig meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The activities are made pursuant to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

C. Salmonella spp. in bovine meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The activities are made pursuant to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

Metodo

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

Bacteriological method: ISO 6579:2002

At meat processing plant

Bacteriological method: ISO 6579:2002

At retail

Bacteriological method: ISO 6579:2002

D. Salmonella spp. in eggs and egg products

Monitoring system

Sampling strategy

The activities are made pursuant to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Frequency of the sampling

Eggs at egg packing centres (foodstuff based approach)

Sampling distributed evenly throughout the year

Eggs at retail

Sampling distributed evenly throughout the year

Raw material for egg products (at production plant)

Sampling distributed evenly throughout the year

Egg products (at production plant and at retail)

Sampling distributed evenly throughout the year

Diagnostic/analytical methods used

Eggs at egg packing centres (foodstuff based approach)

Bacteriological method: ISO 6579:2002

Eggs at retail

Bacteriological method: ISO 6579:2002

Raw material for egg products (at production plant)

Bacteriological method: ISO 6579:2002

Egg products (at production plant and at retail)

Bacteriological method: ISO 6579:2002

Control program/mechanisms

Recent actions taken to control the zoonoses

In 2003 a workshop was organised for "Salmonella in eggs and egg products" coordinated by the Spanish Food Safety and Nutrition Agency. The result was the approval between all the competent authorities in this area of the "Programme on Salmonella spp in eggs and egg products".

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Meat from broilers (Gallus gallus) - carcase - Slaughterhouse - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	262	28	12	1
Meat from broilers (Gallus gallus) - fresh - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	73	2	0	0
Meat from broilers (Gallus gallus) - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	82	3	0	0
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	38	18	1	0
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	25 g	74	0		
Meat from poultry, unspecified - fresh - Cutting plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	1		
Meat from poultry, unspecified - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	4	0		
Meat from poultry, unspecified - fresh - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	17	0		
Meat from poultry, unspecified - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [1)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	14	0		
Meat from poultry, unspecified - meat products - raw and intended to be eaten raw - Retail - Surveillance [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	0		

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Meat from poultry, unspecified - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance [3)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	5	0		
Meat from poultry, unspecified - meat products - raw but intended to be eaten cooked - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	6	0		

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Corvallis	S. Derby	S. Heidelberg	S. Infantis	S. Kentucky	S. Ndolo	S. Virchow
Meat from broilers (Gallus gallus) - carcase - Slaughterhouse - Surveillance		11	1			1	1	1	
Meat from broilers (Gallus gallus) - fresh - Processing plant - Surveillance		0	0						2
Meat from broilers (Gallus gallus) - fresh - Retail - Surveillance		2		1					
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance		1	1		2	13			
Meat from broilers (Gallus gallus) - meat products - raw but intended to be eaten cooked - Retail - Surveillance									
Meat from poultry, unspecified - fresh - Cutting plant - Surveillance		1							
Meat from poultry, unspecified - fresh - Retail - Surveillance									

Table Salmonella in poultry meat and products thereof

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Corvallis	S. Derby	S. Heidelberg	S. Infantis	S. Kentucky	S. Ndolo	S. Virchow
Meat from poultry, unspecified - fresh - Slaughterhouse - Surveillance									
Meat from poultry, unspecified - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [1)]									
Meat from poultry, unspecified - meat products - raw and intended to be eaten raw - Retail - Surveillance [2)]									
Meat from poultry, unspecified - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance [3)]									
Meat from poultry, unspecified - meat products - raw but intended to be eaten cooked - Retail - Surveillance									

Comments:

[1)] Duck ham. Turkey product.

[2)] Turkey product.

[3)] Duck liver.

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.
L: NATIONAL REFERENCE LABORATORY.

Table Salmonella in milk and dairy products

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Cheeses made from cows' milk - fresh - made from raw or low heat-treated milk - Retail - Surveillance [1)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	191	0		
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	4	0		
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	1	0		
Dairy products (excluding cheeses) - ice-cream - made from raw or low heat-treated milk - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	229	0		
Dairy products (excluding cheeses) - milk powder and whey powder - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	10	0		
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - Retail - Surveillance	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	167	12		
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	149	2		
Dairy products, unspecified - Retail - Surveillance [2)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	54	0		
Milk, cows' - UHT milk - Surveillance	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	16	0		
Milk, cows' - raw milk - Surveillance	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	9	0		

Table Salmonella in milk and dairy products

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. London
Cheeses made from cows' milk - fresh - made from raw or low heat-treated milk - Retail - Surveillance [1)]			
Dairy products (excluding cheeses) - butter - made from raw or low heat-treated milk - Retail - Surveillance			
Dairy products (excluding cheeses) - cream - made from raw or low heat-treated milk - Retail - Surveillance			
Dairy products (excluding cheeses) - ice-cream - made from raw or low heat-treated milk - Retail - Surveillance			
Dairy products (excluding cheeses) - milk powder and whey powder - Retail - Surveillance			
Cheeses, made from mixed milk from cows, sheep and/or goats - hard - Retail - Surveillance		2	10
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft - Retail - Surveillance		2	
Dairy products, unspecified - Retail - Surveillance [2)]			
Milk, cows' - UHT milk - Surveillance			
Milk, cows' - raw milk - Surveillance			

Comments:

[1)] Curd cheese

Table Salmonella in milk and dairy products

Comments:

[2)] Ready to eat products: rice with milk, ice creams, yoghourts,...

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.
L: NATIONAL REFERENCE LABORATORY

Table Salmonella in other food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Eggs - table eggs - Packing centre - Surveillance [1)]	F	Objective sampling	Official sampling	food sample	Unknown	Batch		750	7	5	0
Eggs - table eggs - Retail - Surveillance	F,L	Objective sampling	Official sampling	food sample	Unknown	Batch		139	11	9	
Fish - smoked - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	105	0		
Live bivalve molluscs - unspecified - Retail - Surveillance [2)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	343	8		
Seeds, sprouted - ready-to-eat - Retail - Surveillance	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	65	1		
Fruits - pre-cut - ready-to-eat - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	187	0		
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Batch		22	0		
Infant formula - dried - intended for infants below 6 months - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Batch		11	0		
Juice - fruit juice - unpasteurised - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Batch		194	1		
Egg products - Surveillance [3)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	46	6	4	1
Egg products - ready-to-eat - Surveillance [4)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	97	1	0	0
Fish - Surveillance (Fresh/Frozen.) [5)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	95	0		
Fishery products, unspecified - Surveillance (Cooked crustaceans and moluscans.)	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	212	5	1	

Table Salmonella in other food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Fishery products, unspecified - ready-to-eat - Surveillance (Tinned food.)	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	40	0		
Other food - Surveillance (Ready to eat.)	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	4550	13	2	1

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Dabou	S. Infantis	S. Thompson
Eggs - table eggs - Packing centre - Surveillance [1)]		2			
Eggs - table eggs - Retail - Surveillance			1		1
Fish - smoked - Retail - Surveillance					
Live bivalve molluscs - unspecified - Retail - Surveillance [2)]		8			
Seeds, sprouted - ready-to-eat - Retail - Surveillance		1			
Fruits - pre-cut - ready-to-eat - Retail - Surveillance					
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months - Retail - Surveillance					
Infant formula - dried - intended for infants below 6 months - Retail - Surveillance					
Juice - fruit juice - unpasteurised - Retail - Surveillance		1			

Table Salmonella in other food

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Dabou	S. Infantis	S. Thompson
Egg products - Surveillance [3]				1	
Egg products - ready-to-eat - Surveillance [4]		1			
Fish - Surveillance (Fresh/Frozen.) [5]					
Fishery products, unspecified - Surveillance (Cooked crustaceans and moluscans.)		4			
Fishery products, unspecified - ready-to-eat - Surveillance (Tinned food.)					
Other food - Surveillance (Ready to eat.)		10			

Comments:

[1] .

[2] Clam, mussel, baby clam, oyster, shell, cockle.

[3] Liquid egg, egg white, yolk, stuffed egg

[4] Omelette, yolk pie, cream pie,

[5] Cod, mackerel, tuna, salmon, sardine, anchovy, red mullet...

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.
L: NATIONAL REFERENCE LABORATORY.

Table Salmonella in red meat and products thereof

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Meat from pig - carcase - Slaughterhouse - Surveillance	F, L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	468	52	5	17
Meat from pig - fresh - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	30	3		
Meat from pig - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	55	3		
Meat from pig - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	122	14	1	3
Meat from pig - meat products - raw but intended to be eaten cooked - Retail - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	121	19	1	11
Meat from bovine animals - carcase - Slaughterhouse - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	321	23	4	2
Meat from bovine animals - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	12	0		
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	16	0		
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Retail - Surveillance [1)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	64	1	0	0
Other products of animal origin - gelatin and collagen - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	25	0		
Meat from other animal species or not specified - fresh - Retail - Surveillance [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	19	0		

Table Salmonella in red meat and products thereof

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Meat from other animal species or not specified - fresh - Slaughterhouse - Surveillance [3)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	77	0		
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [4)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	250	10	0	0
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Retail - Surveillance [5)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	76	2	0	0
Meat from other animal species or not specified - mechanically separated meat (MSM) - Surveillance [6)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	13	0		
Meat from other animal species or not specified - minced meat - intended to be eaten cooked - Surveillance (Minced meat and meat preparations intended to be eaten cooked.) [7)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	1024	62	8	13
Meat from other animal species or not specified - minced meat - intended to be eaten raw - frozen	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	0		
Meat from pig - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [8)]	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	402	10	0	0
Meat from pig - meat products - raw and intended to be eaten raw - Retail - Surveillance [9)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	187	1	0	1
Meat, mixed meat - meat products - cooked, ready-to-eat - Retail - Surveillance [10)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	442	7	0	0
Meat, mixed meat - meat products - cooked, ready-to-eat - chilled - Processing plant - Surveillance [11)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	215	9	0	0

Table Salmonella in red meat and products thereof

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Altona	S. Anatum	S. Birmingham	S. Bredeney	S. Corvallis	S. Derby	S. Infantis	S. Kentucky	S. Meleagridis
Meat from pig - carcase - Slaughterhouse - Surveillance		28						2			
Meat from pig - fresh - Processing plant - Surveillance		3									
Meat from pig - fresh - Retail - Surveillance		3									
Meat from pig - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance		2		2	1		1	2			1
Meat from pig - meat products - raw but intended to be eaten cooked - Retail - Surveillance		4						1	1		
Meat from bovine animals - carcase - Slaughterhouse - Surveillance		10	4	1							
Meat from bovine animals - fresh - Retail - Surveillance											
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance											
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Retail - Surveillance [1)]		1									
Other products of animal origin - gelatin and collagen - Retail - Surveillance											
Meat from other animal species or not specified - fresh - Retail - Surveillance [2)]											
Meat from other animal species or not specified - fresh - Slaughterhouse - Surveillance [3)]											

Table Salmonella in red meat and products thereof

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Altona	S. Anatum	S. Birmingham	S. Bredeney	S. Corvallis	S. Derby	S. Infantis	S. Kentucky	S. Meleagridis
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [4)]		10									
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Retail - Surveillance [5)]		2									
Meat from other animal species or not specified - mechanically separated meat (MSM) - Surveillance [6)]											
Meat from other animal species or not specified - minced meat - intended to be eaten cooked - Surveillance (Minced meat and meat preparations intended to be eaten cooked.) [7)]		34		1		1		1		1	
Meat from other animal species or not specified - minced meat - intended to be eaten raw - frozen											
Meat from pig - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [8)]		10									
Meat from pig - meat products - raw and intended to be eaten raw - Retail - Surveillance [9)]		0									
Meat, mixed meat - meat products - cooked, ready-to-eat - Retail - Surveillance [10)]		7									
Meat, mixed meat - meat products - cooked, ready-to-eat - chilled - Processing plant - Surveillance [11)]		9									

Table Salmonella in red meat and products thereof

	S. Montevideo	S. Rissen
Meat from pig - carcase - Slaughterhouse - Surveillance		
Meat from pig - fresh - Processing plant - Surveillance		
Meat from pig - fresh - Retail - Surveillance		
Meat from pig - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance		1
Meat from pig - meat products - raw but intended to be eaten cooked - Retail - Surveillance		1
Meat from bovine animals - carcase - Slaughterhouse - Surveillance	2	
Meat from bovine animals - fresh - Retail - Surveillance		
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Processing plant - Surveillance		
Meat from bovine animals - meat products - raw but intended to be eaten cooked - Retail - Surveillance [1)]		
Other products of animal origin - gelatin and collagen - Retail - Surveillance		
Meat from other animal species or not specified - fresh - Retail - Surveillance [2)]		
Meat from other animal species or not specified - fresh - Slaughterhouse - Surveillance [3)]		

Table Salmonella in red meat and products thereof

	S. Montevideo	S. Rissen
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [4)]		
Meat from other animal species or not specified - meat products - raw and intended to be eaten raw - Retail - Surveillance [5)]		
Meat from other animal species or not specified - mechanically separated meat (MSM) - Surveillance [6)]		
Meat from other animal species or not specified - minced meat - intended to be eaten cooked - Surveillance (Minced meat and meat preparations intended to be eaten cooked.) [7)]		3
Meat from other animal species or not specified - minced meat - intended to be eaten raw - frozen		
Meat from pig - meat products - raw and intended to be eaten raw - Processing plant - Surveillance [8)]		
Meat from pig - meat products - raw and intended to be eaten raw - Retail - Surveillance [9)]		
Meat, mixed meat - meat products - cooked, ready-to-eat - Retail - Surveillance [10)]		
Meat, mixed meat - meat products - cooked, ready-to-eat - chilled - Processing plant - Surveillance [11)]		

Comments:

Table Salmonella in red meat and products thereof

Comments:

[1)] Kebab

[2)] Caprine and ovine

[3)] Equine, ovine

[4)] Wild boar, pig, and bovine chorizo.

[5)] Cold cuts. Bovine and pigs chorizos.

[6)] Poultry, pig

[7)] Bovine, pig, equine, poultry.

[8)] Matured ham ,chorizo...

[9)] Matured sausages, ham, chorizo...

[10)] Meat pizzas, Cooked meat products.

[11)] Meat pizzas, Cooked meat products.

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.
L: NATIONAL REFERENCE LABORATORY.

2.1.4 Salmonella in animals

A. Salmonella spp. in Gallus Gallus - breeding flocks

Monitoring system

Sampling strategy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Following point 2 of the Annex of Commisison Regulation (EU) 200/2010 of 10 March, implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of certain Salmonella serotypes in breeding flocks of Gallus gallus. This sampling strategy is implemented by the Spanish National Surveillance and Control Programme on Salmonella in Breeding Flocks of Gallus gallus, approved for co-financing by Commision Decision 2012/761/UE.

Frequency of the sampling

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Every flock is sampled

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

birds of 4 weeks of age and 2 weeks prior movement.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Other: FBO controls: every 2 weeks. Additionally to the FBO controls, during production period an official control sampling is performed, with the following frecuency: 1. within 4 weeks following moving to the laying phase or laying unit 2. towards the end of the laying phase and not earlier than 8 weeks before the end of the production cycle 3. during the production period at time distant enough from the sampling referred in points 1. and 2.

Type of specimen taken

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Other: internal linings of delivery boxes and dead chicks

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

Faeces

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Faeces

Methods of sampling (description of sampling techniques)

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Following point 2 of the Annex of Commisison Regulation (EU) 200/2010 of 10 March, implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of certain Salmonella serotypes in breeding flocks of Gallus gallus.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

Following point 2 of the Annex of Commisison Regulation (EU) 200/2010 of 10 March, implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of certain Salmonella serotypes in breeding flocks of Gallus gallus.

Breeding flocks: Production period

Following point 2 of the Annex of Commisison Regulation (EU) 200/2010 of 10 March, implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of certain Salmonella serotypes in breeding flocks of Gallus gallus.

Case definition

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

A breeding flock shall be considered positive when the presence of the relevant Salmonella serotypes (other than vaccine strains) has been detected in one or more samples taken in the flock, even if the relevant Salmonella serotypes is only detected in the dust sample, or when the confirmatory sampling as part of official controls in accordance with point 2.2.2.2(b) does not confirm the detection of relevant Salmonella serotypes but antimicrobials or bacterial growth inhibitors have been detected in the flock. This rule shall not apply in exceptional cases described in point 2.2.2.2(c) where the initial Salmonella positive result from sampling at the initiative of the food business operator has not been confirmed by the sampling as part of official controls.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

A breeding flock shall be considered positive when the presence of the relevant Salmonella serotypes (other than vaccine strains) has been detected in one or more samples taken in the flock, even if the relevant Salmonella serotypes is only detected in the dust sample, or when the confirmatory sampling as part of official controls in accordance with point 2.2.2.2(b) does not confirm the detection of relevant Salmonella serotypes but antimicrobials or bacterial growth inhibitors have been detected in the flock. This rule shall not apply in exceptional cases described in point 2.2.2.2(c) where the initial Salmonella positive result from sampling at the initiative of the food business operator has not been confirmed by the sampling as part of official controls.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

A breeding flock shall be considered positive when the presence of the relevant Salmonella serotypes (other than vaccine strains) has been detected in one or more samples taken in the flock, even if the relevant Salmonella serotypes is only detected in the dust sample, or when the confirmatory sampling as part of official controls in accordance with point 2.2.2.2(b) does not confirm the detection of relevant Salmonella serotypes but antimicrobials or bacterial growth inhibitors have been detected in the flock. This rule shall not apply in exceptional cases described in point 2.2.2.2(c) where the initial Salmonella positive result from sampling at the initiative of the food business operator has not been confirmed by the sampling as part of official controls.

Diagnostic/analytical methods used

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

Bacteriological method: ISO 6579:2002

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Bacteriological method: ISO 6579:2002

Vaccination policy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Voluntary/Compulsory in rearing flocks of the meat production line if one of the relevant Samonella serovars was detected in the preceeding flock

Other preventive measures than vaccination in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Biosecurity measures.
Compliance with Good Practice Code.

Control program/mechanisms

The control program/strategies in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Spanish National Control and Monitoring Programme on Salmonella in Breeding Flocks of Gallus gallus 2013, approved for co-financing by Commission Decision 2012/761/UE.

Recent actions taken to control the zoonoses

Compulsory National Control and Monitoring Programme on Salmonella in Breeding Flocks of Gallus gallus 2013.

Measures in case of the positive findings or single cases

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

According to the compulsory National Control and Monitoring Programme on Salmonella in Breeding Flocks of Gallus gallus 2013, including:
movement of live birds forbbiden
destruction or treatment of eggs
sacrifice-depopulation of the flock
epidemiological investigations
control of biosecurity measures
control of the effectiveness of cleaning and disinfection

Notification system in place

Since 1952, at least (Epizootic Diseases Law). At the moment by Animal Health Law 8/2006, Royal Decree 328/2003 and Royal Decree 1940/2004.

Results of the investigation

Sampled flocks (adults): 1783
Positive flocks: 21 Salmonella spp.; 7 top 5
Incidence:
- Salmonella spp: 0.78%
- Top 5: 0,39%

National evaluation of the recent situation, the trends and sources of infection

The incidence on Salmonella spp. has decreased from 2012 (2.93%) to 2013 (0.78%) . The incidence on top 5 have increased from 2012 (0,12%) to 2013 (0.39%) . Spain has reached the Community reduction(<1%) target for 2013.

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

Breeding flocks for egg production can be considered a very low source of infection for humans, with no positive flock to Salmonella

B. Salmonella spp. in Gallus Gallus - broiler flocks

Monitoring system

Sampling strategy

Broiler flocks

Following point 1 of the Annex of Commission Regulation (EC) 200/2012 implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in broilers.

Frequency of the sampling

Broiler flocks: Before slaughter at farm

3 weeks prior to slaughter (FBO control). Official control sampling is performed in at least one flock on 10% of the holdings with more than 5000 birds.

Type of specimen taken

Broiler flocks: Before slaughter at farm

Faeces

Methods of sampling (description of sampling techniques)

Broiler flocks: Before slaughter at farm

Following point 2 of the Annex of Commission Regulation (EC) 200/2012 implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in broilers.

Case definition

Broiler flocks: Before slaughter at farm

A flock of broilers shall be considered positive for the purpose of verifying the achievement of the Community target, where the presence of Salmonella enteritidis and/or Salmonella typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Diagnostic/analytical methods used

Broiler flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Vaccination policy

Broiler flocks

Does not exist.

Other preventive measures than vaccination in place

Broiler flocks

Biosecurity measures
Compliance with Good Practice Code

Control program/mechanisms

The control program/strategies in place

Broiler flocks

National Control and Monitoring Plan on Salmonella in broiler flocks 2013, approved for co-financing by Commission Decision 2012/761/UE

Recent actions taken to control the zoonoses

National Control and Monitoring Plan on Salmonella in broiler flocks 2013, including biosecurity measures

and compliance with Good Practice Code following Regulations 2160/2003, 1177/2006 and 200/2012.

Measures in case of the positive findings or single cases

Broiler flocks: Before slaughter at farm

Verification of the compliance of biosecurity measures
Cleaning, disinfection and treatment against rodents and insects
Verification of the efficacy of cleaning and disinfection
Epidemiological investigation

Notification system in place

Since 1952, at least (Epizootic Diseases Law). At the moment by Animal Health Law 8/2003, Royal Decree 328/2003 and Royal Decree 1940/2004.

Results of the investigation

Sampled flocks: 34.003
Positive flocks: 1.117 Salmonella spp.
23 S. enteritidis+typhimurium
Prevalence:
Salmonella spp.: 3.2%
Enteritidis+Typhimurium: 0,06%

National evaluation of the recent situation, the trends and sources of infection

The decreasing trend continues in 2013 and Spain has already reached the community target.

C. Salmonella spp. in Gallus Gallus - flocks of laying hens

Monitoring system

Sampling strategy

Laying hens flocks

Following point 2 of the Annex of Commission Regulation (EC) 517/2011 implementing Regulation (EC) 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of Gallus gallus. This sampling strategy is implemented by the Spanish National Control and Monitoring Programme on Salmonella in Laying Hens 2013, approved by Commision Decision 2012/761/UE.

Frequency of the sampling

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

2 weeks prior to moving to laying unit (FBO control).

Laying hens: Production period

Every 15 weeks (FBO control). Official control is done in one flock per year per holding comprising at least 1000 birds at the end of the production cycle; at the age of 24 +- 2 weeks in flocks housed in buildings where Salmonella was detected in the preceding flock; and in any case of suspicion of Salmonella in the holding.

Type of specimen taken

Laying hens: Production period

Other: fecal material and dust samples if the hygiene and bio-security are deficient or the competent authority considers appropriate

Methods of sampling (description of sampling techniques)

Laying hens: Day-old chicks

Following part B of Annex II of Council Regulation 2160/2003

Laying hens: Rearing period

Following part B of Annex II of Council Regulation 2160/2003

Laying hens: Production period

Following point 2 of the Annex of Commission Regulation (EC) 517/2011. This sampling strategy is implemented by the Spanish National Control and Monitoring Programme on Salmonella in Laying Hens 2013.

Case definition

Laying hens: Rearing period

A rearing flock shall be considered positive where:
the presence of the relevant Salmonella serotypes (other than vaccine strains) has been detected in one or more samples taken in the flock, even if the relevant Salmonella serotype is only detected in the dust sample or dust swab; or
antimicrobials or bacterial growth inhibitors have been detected in the flock.
This rule shall not apply in exceptional cases described in Annex II D point 4 of Regulation (EC) No 2160/2003, where the initial Salmonella positive result has not been confirmed by that respective sampling protocol.

Laying hens: Production period

A laying flock shall be considered positive for the purpose of ascertaining the achievement of the Union target where:
the presence of the relevant Salmonella serotypes (other than vaccine strains) has been detected in one or more samples taken in the flock, even if the relevant Salmonella serotype is only detected in the dust sample or dust swab; or
antimicrobials or bacterial growth inhibitors have been detected in the flock.
This rule shall not apply in exceptional cases described in Annex II D point 4 of Regulation (EC) No 2160/2003, where the initial Salmonella positive result has not been confirmed by that respective sampling protocol.

Diagnostic/analytical methods used

Laying hens: Day-old chicks

Bacteriological method: ISO 6579:2002

Laying hens: Rearing period

Bacteriological method: ISO 6579:2002

Laying hens: Production period

Bacteriological method: ISO 6579:2002

Vaccination policy

Laying hens flocks

Compulsory in rearing period against Salmonella species with impact in public health (at least S. Enteritidis should be included). The competent authority may provide derogation from this provision to a holding if preventive and biocecurity measures have been taken on the holding and absence of Salmonella Enteritidis and Typhimurium was demostrated during 12 months preceding the arrival of the animals.

Other preventive measures than vaccination in place

Laying hens flocks

Biosecurity measures
Compulsory notification
Compulsory monitoring and control programmes
Compliance with Good Practice Code

Control program/mechanisms

The control program/strategies in place

Laying hens flocks

National Control and Monitoring Programme on Salmonella in Laying Hens 2013, approved by Commision Decision 2012/761/UE.

Recent actions taken to control the zoonoses

National Control and Monitoring Programme on Salmonella in Laying Hens 2013, including vaccination, biosecurity measures and compliance with good practices code following criteria of Regulations 2160/2003,517/2011 and 1177/2006.

Measures in case of the positive findings or single cases

Laying hens flocks

According to National Control and Monitoring Programme on Salmonella in Laying Hens 2013,including movement restrictions of live birds (forbidden),destruction or treatment of eggs, sacrifice-depopulation of the flock,epidemiological investigations, control of the bio-security measures and of the efficiency of the

cleaning and disinfection.

Notification system in place

Since 1952 at least (Epizootic Diseases Law). At the moment by Animal Health Law 8/2003, Royal Decree 328/2003 and Royal Decree 1940/2004.

Results of the investigation

Number of flocks (adults)tested: 2.135
Number of positive flocks:
- Salmonella spp.: 187
- Enteritidis+Typhimurium: 40

Incidence:
- Salmonella spp: 8.76%
- Enteritidis+Typhimurium: 1.87%

National evaluation of the recent situation, the trends and sources of infection

The incidence of both Salmonella Enteritidis+Typhimurium has been 1.87 % in 2013. Spain has reached the community target for 2013.

D. Salmonella spp. in bovine animals

Monitoring system

Sampling strategy

Samples have been taken ramdomly (day of sampling each month) in 18 slaughterhouses (distribution of the number of samples according to the capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country (around 52,8%)

Frequency of the sampling

Animals at slaughter (herd based approach)

from April to October

Type of specimen taken

Animals at slaughter (herd based approach)

Faeces

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

Two faecal samples at colon level have been taken in all the slaughter batches in the day of sampling, with a maximun of 30 batches by slaughterhouse and day of sampling .
A total of 292 samples have been taken, belonging to 232 slaughter batches and 232 different holdings.

Faeces were taken from the colon, refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.

Case definition

Animals at slaughter (herd based approach)

A slaughter batch is positive if Salmonella spp. has been isolated from at least one of the two samples of each slaughter batch of young bovines (1-2 years old).

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

Bacteriological method: ISO 6579:2002/Amd 1:2007; PCR.

Results of the investigation

Number of slaughter batches analyzed: 232
Positive : 8 Salmonella spp.
slaughter batch prevalence: 1,7%

National evaluation of the recent situation, the trends and sources of infection

Decreasing prevalence.

E. Salmonella spp. in pigs

Monitoring system

Sampling strategy

Fattening herds

Samples have been taken ramdomly (day of each month) in 19 slaughterhouses (distribution of the number of samples according to the capacity of sacrifice of each slaughterhouse)placed in different regions of Spain and representative of the total volume of sacrifice of the country(53%)

Frequency of the sampling

Fattening herds at slaughterhouse (herd based approach)

between April and October

Type of specimen taken

Fattening herds at slaughterhouse (herd based approach)

faeces

Methods of sampling (description of sampling techniques)

Fattening herds at slaughterhouse (herd based approach)

Two faecal samples at colon level have been taken from all the slaughter batches in the day of sampling, with a maximun of 30 batches by slaughterhouse and day of sampling . Each batch belonged to different herds.
A total of 460 samples have been taken, belonging to 230 slaughter batches and 230 different holdings.
Samples were refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.

Case definition

Fattening herds at slaughterhouse (herd based approach)

A slaughter batch is considered positive for the purpose of this survey if Salmonella spp. has been isolated from the pooled sample of faeces.

Diagnostic/analytical methods used

Fattening herds at slaughterhouse (herd based approach)

Bacteriological method: ISO 6579:2002/Amd 1:2007; PCR

Results of the investigation

Fattening pigs at slaughterhouses:
Tested slaughter batches: 230
Positive: 69
Slaughter batch prevalence: 30% Salmonella spp.

National evaluation of the recent situation, the trends and sources of infection

The prevalence remains at the same level of previous years.

F. Salmonella spp. in turkey - breeding flocks and meat production flocks

Monitoring system

Sampling strategy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Meat production flocks

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Frequency of the sampling

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Following point 1 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

Following point 1 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Other: Following points 1 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Meat production flocks: Before slaughter at farm

Other: Following point 1 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Type of specimen taken

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Other: Following points 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Other: Following point 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Meat production flocks: Before slaughter at farm

Other: Following points 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Methods of sampling (description of sampling techniques)

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in

turkeys.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Meat production flocks: Before slaughter at farm

Following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Case definition

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period

A flock of turkeys shall be considered positive , where the presence of Salmonella enteritidis and/or Salmonella typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

A flock of turkeys shall be considered positive for the purpose of verifying the achievement of the Community target, where the presence of Salmonella enteritidis and/or Salmonella typhimurium (other than vaccine strains) was detected in the flock at any occasion.
Positive flocks of turkeys shall be counted only once per round, irrespective of the number of sampling and testing operations and only be reported in the year of the first positive sampling.

Meat production flocks: Day-old chicks

Meat production flocks: Before slaughter at farm

A flock of turkeys shall be considered positive for the purpose of verifying the achievement of the Community target, where the presence of Salmonella enteritidis and/or Salmonella typhimurium (other than vaccine strains) was detected in the flock at any occasion.

Diagnostic/analytical methods used

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks

Bacteriological method: ISO 6579:2002

Breeding flocks (separate elite, grand parent and parent flocks when necessary): Production period

Bacteriological method: ISO 6579:2002

Meat production flocks: Before slaughter at farm

Bacteriological method: ISO 6579:2002

Vaccination policy

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Voluntary

Meat production flocks

Does not exists.

Other preventive measures than vaccination in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Biosecurity measures.
Compliance with Good Practice Code

Meat production flocks

Biosecurity measures.
Compliance with Good Practice Code

Control program/mechanisms

The control program/strategies in place

Breeding flocks (separate elite, grand parent and parent flocks when necessary)

Spanish National Control and Monitoring Programme on Salmonella in Breeding Flocks of Turkeys, approved for co-financing by Commission Decision 2012/761/UE.

Meat production flocks

Spanish National Control and Monitoring Programme on Salmonella in Meat Production Flocks of Turkeys, approved for co-financing by Commission Decision 2012/761/UE

Recent actions taken to control the zoonoses

Compulsory National Control and Monitoring Programme on Salmonella in Breeding Flocks and Meat Production Flocks of Turkeys 2013, following criteria of Regulation (EC) 584/2008.

Measures in case of the positive findings or single cases

According to Compulsory National Control and Monitoring Programme on Salmonella in Breeding Flocks and Meat Production Flocks of Turkeys 2013, following criteria of Regulation (EC) 584/2008.

Notification system in place

Since 1952, at least (Epizootic Diseases Law). At the moment by Animal Health Law 8/2006, Royal Decree 328/2003 and Royal Decree 1940/2004.

Results of the investigation

Breeding turkeys:
number of adult flocks tested : 36
positive (Enteritidis+ Typhimurium): 0
positive Salmonella spp.:7
flock prevalence SE y ST: 0%
flock prevalence Salmonella spp.:19.4%
Fattening turkeys:
number of flocks tested: 2.898
positive (Enteritidis+ Typhimurium): 5
flock prevalence: 0.17%
positive Salmonella spp.: 270
flock prevalence: 9.3%

Table Salmonella in breeding flocks of Gallus gallus

	No of flocks under control programme	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Target Verification	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes	1719	MAGRAMA	Census	Official sampling	environmental sample > boot swabs	Domestic	no	Flock	1219	18	1
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes	1719	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	1719	18	1
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes	1719	MAGRAMA	Census	Official and industry sampling	environmental sample > boot swabs	Domestic	yes	Flock	1719	21	3
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes	64	MAGRAMA	Census	Official and industry sampling	environmental sample > boot swabs	Domestic	yes	Flock	64	0	
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes	64	MAGRAMA	Census	Industry sampling	environmental sample	Domestic	no	Flock	64	0	
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes	64	MAGRAMA	Census	Official sampling	environmental sample	Domestic	no	Flock	64	0	
Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - Control and eradication programmes	853	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	853	19	

Table Salmonella in breeding flocks of Gallus gallus

	S. Hadar	S. Infantis	S. Typhimurium	S. Virchow	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Kentucky	S. London	S. Mikawasima	S. Senftenberg	S. Tennessee
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes			1		2	14					
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes	1			1	1	14					
Gallus gallus (fowl) - breeding flocks for broiler production line - adult - Control and eradication programmes	1		1		2	14					
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes											
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes											
Gallus gallus (fowl) - breeding flocks for egg production line - adult - Control and eradication programmes											
Gallus gallus (fowl) - breeding flocks, unspecified - during rearing period - Control and eradication programmes	2		3			14					

Table Salmonella in other birds

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-
Quails - Farm - Monitoring	CCAA	Convenience sampling	Official sampling	animal sample > faeces		Animal	294	131	1	21	
Pheasants - Monitoring	CCAA	Convenience sampling	Official sampling	animal sample > faeces		Animal	22	2		1	
Partridges - farmed - Farm - Monitoring	CCAA	Convenience sampling	Official sampling	animal sample > faeces		Animal	159	26		4	

	Salmonella spp., unspecified
Quails - Farm - Monitoring	109
Pheasants - Monitoring	1
Partridges - farmed - Farm - Monitoring	22

Table Salmonella in other animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	S. 1,4,[5],12:i:-
Pigs - fattening pigs - Slaughterhouse - Monitoring	MAGRAMA	Objective sampling	Official sampling	animal sample > faeces	Domestic	Slaughter batch	230	69	0	7	22
Cattle (bovine animals) - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	MAGRAMA	Objective sampling	Official sampling	animal sample > faeces	Domestic	Slaughter batch	232	8	0	0	2

	Salmonella spp., unspecified	S. Anatum	S. Derby	S. Kentucky	S. Rissen
Pigs - fattening pigs - Slaughterhouse - Monitoring	15	0	6	0	19
Cattle (bovine animals) - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	4	1	0	1	0

Table Salmonella in other poultry

	No of flocks under control programme	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Target Verification	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis
Gallus gallus (fowl) - laying hens - during rearing period - Control and eradication programmes	874	MAGRAMA	Census	Industry sampling	animal sample > faeces	Domestic	no	Flock	874	19	1
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	2135	MAGRAMA	Census	Industry sampling	animal sample > faeces	Domestic	no	Flock	1889	141	5
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	34003	MAGRAMA	Census	Official sampling	environmental sample > boot swabs	Domestic	no	Flock	545	31	0
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	34003	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	33925	1167	4
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	34003	MAGRAMA	Census	Official and industry sampling	environmental sample > boot swabs	Domestic	yes	Flock	34003	1117	2
Turkeys - breeding flocks, unspecified - during rearing period - Farm - Control and eradication programmes	22	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	22	0	0
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	36	MAGRAMA	Census	Official and industry sampling	environmental sample > boot swabs	Domestic	yes	Flock	36	7	0
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	36	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	36	6	0
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	36	MAGRAMA	Census	Official sampling	environmental sample > boot swabs	Domestic	no	Flock	36	7	0
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	2898	MAGRAMA	Census	Official and industry sampling	environmental sample > boot swabs	Domestic	yes	Flock	2898	270	1
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	2898	MAGRAMA	Census	Industry sampling	environmental sample > boot swabs	Domestic	no	Flock	2871	272	1

Table Salmonella in other poultry

	No of flocks under control programme	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Target Verification	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	2898	MAGRAMA	Census	Official sampling	environmental sample > boot swabs	Domestic	no	Flock	87	26	0
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	2135	MAGRAMA	Census	Official sampling	animal sample > faeces	Domestic	no	Flock	709	142	28
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	2135	MAGRAMA	Census	Official and industry sampling	animal sample > faeces	Domestic	yes	Flock	2135	187	33

	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Bredeney	S. Corvallis	S. Derby	S. Goldcoast	S. Hadar	S. Havana	S. Infantis	S. Kentucky
Gallus gallus (fowl) - laying hens - during rearing period - Control and eradication programmes	1	0	17								
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	0	0	136								
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	2	2	11						2		6
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	20	2	1141								
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	19	2	1078						2		6
Turkeys - breeding flocks, unspecified - during rearing period - Farm - Control and eradication programmes	0	0	0								
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	0	0	1				1				

Table Salmonella in other poultry

	S. Typhimurium	S. 1,4,[5],12:i:-	Salmonella spp., unspecified	S. Bredeney	S. Corvallis	S. Derby	S. Goldcoast	S. Hadar	S. Havana	S. Infantis	S. Kentucky
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	0	0	6								
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes	0	0	1				1				
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	4	0	242	1		6	0	4			10
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	3	0	268								
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes	1	0	2	1		6		4			10
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	5	2	49		11			1		25	3
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	5	2	147								

	S. Mikawasima	S. Newport	S. Ohio	S. Schwarzengrund	S. Senftenberg	S. Tennessee	S. Virchow
Gallus gallus (fowl) - laying hens - during rearing period - Control and eradication programmes							
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes							
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	1	1			1		5

Table Salmonella in other poultry

	S. Mikawasima	S. Newport	S. Ohio	S. Schwarzengrund	S. Senftenberg	S. Tennessee	S. Virchow
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes							
Gallus gallus (fowl) - broilers - before slaughter - Farm - Control and eradication programmes	1	1			1		5
Turkeys - breeding flocks, unspecified - during rearing period - Farm - Control and eradication programmes							
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes				5			
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes							
Turkeys - breeding flocks, unspecified - adult - Farm - Control and eradication programmes				5			
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes		2					
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes							
Turkeys - fattening flocks - before slaughter - Farm - Control and eradication programmes		2					
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes	2	2	10		2	1	1
Gallus gallus (fowl) - laying hens - adult - Farm - Control and eradication programmes							

Table Salmonella in other poultry

2.1.5 Salmonella in feedingstuffs

Table Salmonella in compound feedingstuffs

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Compound feedingstuffs for cattle - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	118	4		
Compound feedingstuffs for pigs - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	79	2		
Compound feedingstuffs for poultry (non specified) - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	119	4		
Compound feedingstuffs for fish - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	10	0		
Compound feedingstuffs for horses - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	3	0		
Compound feedingstuffs for rabbits - final product - Feed mill - Surveillance	MAGRAMA	Objective sampling	Official sampling	feed sample		Batch	25 gr	5	0		

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified
Compound feedingstuffs for cattle - final product - Feed mill - Surveillance		4
Compound feedingstuffs for pigs - final product - Feed mill - Surveillance		2

Table Salmonella in compound feedingstuffs

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified
Compound feedingstuffs for poultry (non specified) - final product - Feed mill - Surveillance		4
Compound feedingstuffs for fish - final product - Feed mill - Surveillance		
Compound feedingstuffs for horses - final product - Feed mill - Surveillance		
Compound feedingstuffs for rabbits - final product - Feed mill - Surveillance		

Table Salmonella in feed material of animal origin

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Feed material of land animal origin - dairy products - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	2	0		
Feed material of land animal origin - meat meal - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	56	6		
Feed material of land animal origin - meat and bone meal - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	15	1		
Feed material of land animal origin - blood meal - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	3	0		
Feed material of marine animal origin - fish meal - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	68	1		

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified
Feed material of land animal origin - dairy products - Feed mill - Surveillance		
Feed material of land animal origin - meat meal - Feed mill - Surveillance		6
Feed material of land animal origin - meat and bone meal - Feed mill - Surveillance		1
Feed material of land animal origin - blood meal - Feed mill - Surveillance		
Feed material of marine animal origin - fish meal - Feed mill - Surveillance		1

Table Salmonella in feed material of animal origin

Table Salmonella in other feed matter

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium
Feed material of cereal grain origin - barley derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	17	0		
Feed material of cereal grain origin - wheat derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	16	2		
Feed material of cereal grain origin - other cereal grain derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	19	0		
Feed material of cereal grain origin - maize derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	29	0		
Feed material of oil seed or fruit origin - rape seed derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	4	1		
Feed material of oil seed or fruit origin - palm kernel derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	1	0		
Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	32	4		
Feed material of oil seed or fruit origin - cotton seed derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	5	1		
Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	2	1		
Other feed material - legume seeds and similar products - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	3	0		
Other feed material - tubers, roots and similar products - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	3	0		
Other feed material - other seeds and fruits - Feed mill - Surveillance	CCAA	Objective sampling	Official sampling	feed sample		Batch	25 gr	5	0		

Table Salmonella in other feed matter

	S. 1,4,[5],12:i:-	Salmonella spp., unspecified
Feed material of cereal grain origin - barley derived - Feed mill - Surveillance		
Feed material of cereal grain origin - wheat derived - Feed mill - Surveillance		2
Feed material of cereal grain origin - other cereal grain derived - Feed mill - Surveillance		
Feed material of cereal grain origin - maize derived - Feed mill - Surveillance		
Feed material of oil seed or fruit origin - rape seed derived - Feed mill - Surveillance		1
Feed material of oil seed or fruit origin - palm kernel derived - Feed mill - Surveillance		
Feed material of oil seed or fruit origin - soya (bean) derived - Feed mill - Surveillance		4
Feed material of oil seed or fruit origin - cotton seed derived - Feed mill - Surveillance		1
Feed material of oil seed or fruit origin - sunflower seed derived - Feed mill - Surveillance		1
Other feed material - legume seeds and similar products - Feed mill - Surveillance		
Other feed material - tubers, roots and similar products - Feed mill - Surveillance		
Other feed material - other seeds and fruits - Feed mill - Surveillance		

Table Salmonella in other feed matter

2.1.6 Antimicrobial resistance in Salmonella isolates

A. Antimicrobial resistance in Salmonella in cattle

Sampling strategy used in monitoring

Frequency of the sampling

see text form on Salmonella spp. in bovine animals

Type of specimen taken

see text form on Salmonella spp. in bovine animals

Methods of sampling (description of sampling techniques)

see text form on Salmonella spp. in bovine animals

Procedures for the selection of isolates for antimicrobial testing

all isolates tested for antimicrobial resistance

Methods used for collecting data

Active monitoring programme 2013

Laboratory methodology used for identification of the microbial isolates

see text form on Salmonella spp. in bovine animals

Laboratory used for detection for resistance

Antimicrobials included in monitoring

see table on antimicrobial resistance Salmonella in cattle

Cut-off values used in testing

see table of breakpoints

Results of the investigation

sent through DCF

B. Antimicrobial resistance in Salmonella in pigs

Sampling strategy used in monitoring

Frequency of the sampling

There has been a specific monitoring programme for antimicrobial surveillance running from 1999 at national level in Spain. These national active monitoring programme are performed in fattening pigs at slaughterhouse. For more information on the frequency of sampling, please, see text forms on Salmonella in pigs.

Methods of sampling (description of sampling techniques)

See text forms on Salmonella in pigs.

Procedures for the selection of isolates for antimicrobial testing

All isolates tested for antimicrobial resistance (48)

Methods used for collecting data

Following point 2 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.

Laboratory methodology used for identification of the microbial isolates

See text forms on Salmonella in pigs.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Following point 2 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.
See tables on antimicrobial resistance.

Cut-off values used in testing

Following point 2 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.
See table on breakpoints.

Results of the investigation

Sent trough DCF

C. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

National antimicrobial resistance surveillance programme has been running from 2003 at national level. In 2013 a national control programme has been applied in breeders, laying hens, broilers and turkeys. Then, sampling strategies and frequency of sampling has been performed following Commission Regulation (EC) No 517/2011 of 25 May 2011 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in laying hens of Gallus gallus ; Commission Regulation (EC) No 200/2012 of 8 March 2012 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Community target for the reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in broilers; following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys and Commission Regulation (EC) No 200/2010 of 10 March 2010 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding hens of Gallus gallus.

Type of specimen taken

Laying hens: following point 2.2. of the Annex of Commission Regulation (EC) No 517/2011
Breeding hens: following point 2.2. of the Annex of Commission Regulation (EC) No 200/2010
Broilers: point 2 of the Annex of Commission Regulation (EC) No 200/2012 of 8 March 2012 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Community target for the reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in broilers.

Turkeys: following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Methods of sampling (description of sampling techniques)

Laying hens: following point 2.2. of the Annex of Commission Regulation (EC) No 517/2011.
Breeding hens: following point 2.2. of the Annex of Commission Regulation (EC) No 200/2010.
Broilers: point 2 of the Annex of Commission Regulation (EC) No 200/2012 of 8 MArch 2012 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Community target for the reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in broilers.

Turkeys: following points 1 and 2 of the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Procedures for the selection of isolates for antimicrobial testing

Following ponit 2 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.

Methods used for collecting data

Following article 2 of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.

Laboratory methodology used for identification of the microbial isolates

Laying hens: following point 3 of the Annex of Commission Regulation (EC) No 517/2011
Breeding hens: ollowing point 3 of the Annex of Commission Regulation (EC) No 200/2010
Broilers: point 3 of the Annex of Commission Regulation (EC) No 200/2012 of 8 March 2012 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Community target for the reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in broilers.

Turkeys: following the Annex of Commission Regulation (EC) 584/2008 as regards a Community target for the reduction of the prevalence of Salmonella Enteritidis and Salmonella Typhimurium in turkeys.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Following point 4 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.

Cut-off values used in testing

Following point 4 of the Annex of Commision Decision 2007/407/CE, on a harmonized monitoring scheme of antimicrobial resistance in Salmonella in fowl (Gallus gallus) and pigs.

Preventive measures in place

Article 2 of Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry.

Control program/mechanisms

The control program/strategies in place

Spanish control programmes on Salmonella in breeding flocks of Gallus gallus, laying hens, broilers and turkeys 2013.

Recent actions taken to control the zoonoses

Spanish control programmes of Salmonella in breeding flocks of Gallus gallus, laying hens, broilers and turkeys 2013.

Measures in case of the positive findings or single cases

Spanish control programmes of Salmonella in breeding flocks of Gallus gallus, laying hens, broilers and turkeys 2013.

Notification system in place

Spanish control programmes of Salmonella in breeding flocks of Gallus gallus, laying hens, broilers and turkeys 2013.

Results of the investigation

Sent trough DCF

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Salmonella	S. Typhimurium		S. 1,4,[5],12:i:-		S. Derby		S. Agona		Salmonella spp.	
Isolates out of a monitoring program (yes/no)									yes	
Number of isolates available in the laboratory									24	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Aminoglycosides - Gentamicin									24	1
Aminoglycosides - Kanamycin									22	3
Aminoglycosides - Streptomycin									22	11
Amphenicols - Chloramphenicol									22	5
Amphenicols - Florfenicol									11	2
Cephalosporins - 3rd generation cephalosporins									13	0
Fluoroquinolones - Ciprofloxacin									18	1
Fluoroquinolones - Enrofloxacin									3	1
Penicillins - Ampicillin									24	19
Quinolones - Nalidixic acid									24	2
Sulfonamides									20	16
Tetracyclines - Tetracycline									22	20
Trimethoprim									20	1
Fully sensitive									24	2
Resistant to 1 antimicrobial									24	4
Resistant to 2 antimicrobials									24	1
Resistant to 3 antimicrobials									24	4
Resistant to 4 antimicrobials									24	8
Resistant to >4 antimicrobials									24	5

Table Antimicrobial susceptibility testing of Salmonella in meat from pig

Salmonella	S. Typhimurium		S. 1,4,[5],12:i:-		S. Derby		S. Agona		Salmonella spp.	
Isolates out of a monitoring program (yes/no)									yes	
Number of isolates available in the laboratory									24	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n
Aminoglycosides - Amikacin									3	0
Cephalosporins - Cefepime									3	0
Cephalosporins - Cefotaxime									6	0
Penicillins - Amoxicillin / Clavulanic acid									3	0

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of Salmonella in meat from broilers (Gallus gallus)

Salmonella	S. Enteritidis		S. Typhimurium		S. 1,4,[5],12:i:-		S. Java		S. Agona		S. Virchow		S. Hadar		S. Kentucky		S. Infantis		Salmonella spp.	
Isolates out of a monitoring program (yes/no)																			yes	
Number of isolates available in the laboratory																			15	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides - Gentamicin																			14	0
Aminoglycosides - Kanamycin																			9	0
Aminoglycosides - Streptomycin																			10	0
Amphenicols - Chloramphenicol																			8	0
Cephalosporins - 3rd generation cephalosporins																			11	1
Fluoroquinolones - Ciprofloxacin																			12	0
Penicillins - Ampicillin																			13	2
Quinolones - Nalidixic acid																			13	2
Sulfonamides																			8	1
Tetracyclines - Tetracycline																			8	1
Trimethoprim																			4	0
Fully sensitive																			15	10
Resistant to 1 antimicrobial																			15	3
Resistant to 2 antimicrobials																			15	0
Resistant to 3 antimicrobials																			15	2
Resistant to 4 antimicrobials																			15	0
Resistant to >4 antimicrobials																			15	0

Table Antimicrobial susceptibility testing of Salmonella in meat from broilers (Gallus gallus)

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Salmonella in meat from other poultry species

Salmonella	S. Enteritidis		S. Typhimurium		S. 1,4,[5],12:i:-		S. Agona		S. Virchow		S. Hadar		S. Kentucky		S. Infantis		Salmonella spp.	
Isolates out of a monitoring program (yes/no)																	yes	
Number of isolates available in the laboratory																	3	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides - Gentamicin																	3	0
Aminoglycosides - Kanamycin																	3	0
Aminoglycosides - Streptomycin																	3	0
Amphenicols - Chloramphenicol																	3	0
Amphenicols - Florfenicol																	2	0
Cephalosporins - 3rd generation cephalosporins																	1	1
Fluoroquinolones - Ciprofloxacin																	3	2
Fluoroquinolones - Enrofloxacin																	1	0
Penicillins - Ampicillin																	3	1
Quinolones - Nalidixic acid																	3	2
Sulfonamides																	3	1
Tetracyclines - Tetracycline																	3	1
Trimethoprim																	3	1
Fully sensitive																	3	0
Resistant to 1 antimicrobial																	3	0
Resistant to 2 antimicrobials																	3	2
Resistant to 3 antimicrobials																	3	0
Resistant to 4 antimicrobials																	3	0
Resistant to >4 antimicrobials																	3	1

Table Antimicrobial susceptibility testing of Salmonella in meat from other poultry species

Salmonella	S. Enteritidis		S. Typhimurium		S. 1,4,[5],12:i:-		S. Agona		S. Virchow		S. Hadar		S. Kentucky		S. Infantis		Salmonella spp.	
Isolates out of a monitoring program (yes/no)																	yes	
Number of isolates available in the laboratory																	3	
Antimicrobials:	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n
Aminoglycosides - Amikacin																	2	0
Carbapenems - Imipenem																	2	0
Cephalosporins - Cefepime																	2	0
Cephalosporins - Cefotaxime																	3	1
Penicillins - Amoxicillin / Clavulanic acid																	2	0
Trimethoprim + Sulfonamides																	1	1

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Salmonella in Egg products - food sample

Salmonella	Salmonella spp.	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	15	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	15	0
Aminoglycosides - Kanamycin	15	0
Aminoglycosides - Streptomycin	15	3
Amphenicols - Chloramphenicol	15	0
Amphenicols - Florfenicol	9	0
Cephalosporins - Cefotaxime	9	0
Fluoroquinolones - Ciprofloxacin	12	4
Penicillins - Ampicillin	15	3
Quinolones - Nalidixic acid	15	6
Sulfonamides	12	0
Tetracyclines - Tetracycline	15	0
Trimethoprim	12	0
Aminoglycosides - Amikacin	9	0
Carbapenems - Imipenem	9	0
Cephalosporins - Cefepime	9	0
Fully sensitive	15	3
Penicillins - Amoxicillin / Clavulanic acid	8	0
Resistant to 1 antimicrobial	15	6
Resistant to 2 antimicrobials	15	3

Table Antimicrobial susceptibility testing of Salmonella in Egg products - food sample

Salmonella	Salmonella spp.	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	15	
Antimicrobials:	N	n
Resistant to 3 antimicrobials	15	3
Resistant to 4 antimicrobials	15	0
Resistant to >4 antimicrobials	15	0
Trimethoprim + Sulfonamides	3	0

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Salmonella in Meat, mixed meat

Salmonella	Salmonella spp.	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	50	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	50	4
Aminoglycosides - Kanamycin	50	0
Aminoglycosides - Streptomycin	50	39
Amphenicols - Chloramphenicol	47	12
Amphenicols - Florfenicol	4	0
Cephalosporins - 3rd generation cephalosporins	7	0
Cephalosporins - Cefotaxime	8	0
Fluoroquinolones - Ciprofloxacin	12	1
Fluoroquinolones - Enrofloxacin	4	2
Penicillins - Ampicillin	50	42
Quinolones - Nalidixic acid	50	4
Sulfonamides	49	38
Tetracyclines - Tetracycline	50	42
Trimethoprim	46	6
Aminoglycosides - Amikacin	4	0
Carbapenems - Imipenem	4	0
Cephalosporins - Cefepime	4	0
Fully sensitive	50	5
Penicillins - Amoxicillin / Clavulanic acid	4	1

Table Antimicrobial susceptibility testing of Salmonella in Meat, mixed meat

Salmonella	Salmonella spp.	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	50	
Antimicrobials:	N	n
Resistant to 1 antimicrobial	50	3
Resistant to 2 antimicrobials	50	2
Resistant to 3 antimicrobials	50	0
Resistant to 4 antimicrobials	50	25
Resistant to >4 antimicrobials	50	15

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Salmonella in Fishery products, unspecified

Salmonella	Salmonella spp.	
Isolates out of a monitoring program (yes/no)	no	
Number of isolates available in the laboratory	7	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	7	0
Aminoglycosides - Kanamycin	7	0
Aminoglycosides - Streptomycin	7	0
Amphenicols - Chloramphenicol	7	0
Amphenicols - Florfenicol	2	0
Cephalosporins - 3rd generation cephalosporins	2	0
Fluoroquinolones - Ciprofloxacin	3	0
Penicillins - Ampicillin	7	0
Quinolones - Nalidixic acid	7	0
Sulfonamides	6	1
Tetracyclines - Tetracycline	7	0
Trimethoprim	6	0
Fully sensitive	7	6
Resistant to 1 antimicrobial	7	1
Resistant to 2 antimicrobials	7	0
Resistant to 3 antimicrobials	7	0
Resistant to 4 antimicrobials	7	0
Resistant to >4 antimicrobials	7	0
Trimethoprim + Sulfonamides	3	0

Table Antimicrobial susceptibility testing of Salmonella in Fishery products, unspecified

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Salmonella spp. in All foodstuffs - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

Salmonella spp.	All foodstuffs																									
Isolates out of a monitoring program (yes/no)	yes																									
Number of isolates available in the laboratory	31																									
Antimicrobials:	Cut-off value	N	n	<=4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Aminoglycosides - Gentamicin	12	20	1		1											2	3	1	9	4						
Aminoglycosides - Kanamycin	13	20	1		1										1	2	3	3	9	1						
Aminoglycosides - Streptomycin	10	20	10		9				1	1		4	1	1	2	1										
Amphenicols - Chloramphenicol	12	20	2		1		1										1						2	6	3	2
Amphenicols - Florfenicol	12	9	0															1				1	1	5		
Cephalosporins - 3rd generation cephalosporins	14	31	1						1							1			1		2	4	2	5	4	1
Cephalosporins - Cefotaxime	14	29	1						1										1			2	5	7	3	
Fluoroquinolones - Ciprofloxacin	15	20	0																			1	1			
Penicillins - Ampicillin	13	18	14		14															1		2		1		
Quinolones - Nalidixic acid	13	20	1		1										1		1	2		1	4	2	5	2	1	
Sulfonamides	12	20	12		12												1	1	1	3	1			1		
Tetracyclines - Tetracycline	14	18	14		11	2		1											2		1		1			
Aminoglycosides - Amikacin	14	18	0																1	6	2	8	1			
Carbapenems - Imipenem	19	18	0																						2	
Penicillins - Amoxicillin / Clavulanic acid	13	18	1									1			1	1		2	1						2	6
Trimethoprim + Sulfonamides	10	20	2		2												1	1	2	4		4		4		

Table Antimicrobial susceptibility testing of Salmonella spp. in All foodstuffs - quantitative data [Diffusion method]

Salmonella spp.	All foodstuffs								
Isolates out of a monitoring program (yes/no)	yes								
Number of isolates available in the laboratory	31								
Antimicrobials:	28	29	30	31	32	33	34	35	>=36
Aminoglycosides - Gentamicin									
Aminoglycosides - Kanamycin									
Aminoglycosides - Streptomycin									
Amphenicols - Chloramphenicol	1		2		1				
Amphenicols - Florfenicol					1				
Cephalosporins - 3rd generation cephalosporins		3	2	2	3				
Cephalosporins - Cefotaxime		2	2	2	4				
Fluoroquinolones - Ciprofloxacin			1	2	6	4		5	
Penicillins - Ampicillin									
Quinolones - Nalidixic acid									
Sulfonamides									
Tetracyclines - Tetracycline									
Aminoglycosides - Amikacin									
Carbapenems - Imipenem	8		7		1				
Penicillins - Amoxicillin / Clavulanic acid	3	1							
Trimethoprim + Sulfonamides	1	1							

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of Salmonella spp. in All foodstuffs - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Salmonella spp.	All foodstuffs																									
Isolates out of a monitoring program (yes/no)	yes																									
Number of isolates available in the laboratory	54																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	40	2			7						14	10	6	1			1	1							
Aminoglycosides - Kanamycin	8	34	2												7	23	2				1			1		
Aminoglycosides - Streptomycin	64	44	13										5	2	3	9	7	4		1	3	7		3		
Amphenicols - Chloramphenicol	16	41	5												3	25	7	1	1	1	2	1				
Amphenicols - Florfenicol	16	17	1												4	12			1							
Cephalosporins - 3rd generation cephalosporins	1	7	1							4	1	1								1						
Cephalosporins - Cefotaxime	5	24	1							14	8	1						1								
Fluoroquinolones - Ciprofloxacin	1	39	1			7	4		7	1	4	11	3	1				1								
Penicillins - Ampicillin	16	54	25			7							4	10	4	3		1		8		15	2			
Quinolones - Nalidixic acid	16	43	19			7										12	4	1			8	7	4			
Sulfonamides	256	34	16										2						2	10	4			11	5	
Tetracyclines - Tetracycline	8	47	23									1		16	6		1		6		4	13				
Trimethoprim	2	24	3										20	1				2	1							
Cephalosporins - Cefepime	2	16	0			7						8	1													
Trimethoprim + Sulfonamides	2	11	3								7			1					2				1			

Table Antimicrobial susceptibility testing of Salmonella spp. in All foodstuffs - quantitative data [Dilution method]

Salmonella spp.	All foodstuffs	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	54	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin		
Aminoglycosides - Kanamycin		
Aminoglycosides - Streptomycin		
Amphenicols - Chloramphenicol		
Amphenicols - Florfenicol		
Cephalosporins - 3rd generation cephalosporins		
Cephalosporins - Cefotaxime		
Fluoroquinolones - Ciprofloxacin		
Penicillins - Ampicillin		
Quinolones - Nalidixic acid		
Sulfonamides		
Tetracyclines - Tetracycline		
Trimethoprim		
Cephalosporins - Cefepime		
Trimethoprim + Sulfonamides		

Footnote:

Source of information: Public Health Services of the Autonomus Communities.

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	4	0									1	3													
Aminoglycosides - Kanamycin	4	4	0													4										
Aminoglycosides - Streptomycin	32	4	0													2	2									
Amphenicols - Chloramphenicol	16	4	0													1	3									
Amphenicols - Florfenicol	16	4	0													4										
Cephalosporins - Cefotaxime	0.5	4	0							1	3															
Fluoroquinolones - Ciprofloxacin	0.06	4	0				1		3																	
Penicillins - Ampicillin	4	4	0											1	3											
Quinolones - Nalidixic acid	16	4	0													4										
Tetracyclines - Tetracycline	8	4	0												4											
Trimethoprim	2	4	0										4													
Cephalosporins - Ceftazidime	2	4	0									4														
Polymyxins - Colistin	2	4	3												1	3										
Sulfonamides - Sulfamethoxazole	256	4	0																1	3						

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Enteritidis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Havana in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Havana	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	1										1					1								
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	1													1				1						
Amphenicols - Chloramphenicol	16	2	0															2								
Amphenicols - Florfenicol	16	2	0															2								
Cephalosporins - Cefotaxime	0.5	2	0								1	1														
Fluoroquinolones - Ciprofloxacin	0.06	2	1						1								1									
Penicillins - Ampicillin	4	2	0												2											
Quinolones - Nalidixic acid	16	2	1														1			1						
Tetracyclines - Tetracycline	8	2	0												1	1										
Trimethoprim	2	2	0										1	1												
Cephalosporins - Ceftazidime	2	2	0										1	1												
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																1	1						

Table Antimicrobial susceptibility testing of S. Havana in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Havana	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. London in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. London	Pigs - fattening pigs - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1											
Aminoglycosides - Kanamycin	4	1	0													1									
Aminoglycosides - Streptomycin	32	1	0														1								
Amphenicols - Chloramphenicol	16	1	0														1								
Amphenicols - Florfenicol	16	1	0													1									
Cephalosporins - Cefotaxime	0.5	1	0							1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																
Penicillins - Ampicillin	4	1	0											1											
Quinolones - Nalidixic acid	16	1	0													1									
Tetracyclines - Tetracycline	8	1	0												1										
Trimethoprim	2	1	0											1											
Cephalosporins - Ceftazidime	2	1	0									1													
Polymyxins - Colistin	2	1	0												1										
Sulfonamides - Sulfamethoxazole	256	1	0																1						

Table Antimicrobial susceptibility testing of S. London in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. London	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. London in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. London	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	24	0										19	5												
Aminoglycosides - Kanamycin	4	24	24																		24					
Aminoglycosides - Streptomycin	32	24	10																14	9	1					
Amphenicols - Chloramphenicol	16	24	24																	24						
Amphenicols - Florfenicol	16	24	0															24								
Cephalosporins - Cefotaxime	0.5	24	0							17	7															
Fluoroquinolones - Ciprofloxacin	0.06	24	24									21	3													
Penicillins - Ampicillin	4	24	24																24							
Quinolones - Nalidixic acid	16	24	0														6	18								
Tetracyclines - Tetracycline	8	24	24																	24						
Trimethoprim	2	24	24																24							
Cephalosporins - Ceftazidime	2	24	0									23	1													
Polymyxins - Colistin	2	24	0												24											
Sulfonamides - Sulfamethoxazole	256	24	24																					24		

Table Antimicrobial susceptibility testing of S. London in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

S. London	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Mbandaka in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Mbandaka	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0												1											
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Mbandaka in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Mbandaka	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Mikawasima in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Mikawasima	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1	1													
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	1																1		1					
Amphenicols - Chloramphenicol	16	2	0												1		1									
Amphenicols - Florfenicol	16	2	0												1		1									
Cephalosporins - Cefotaxime	0.5	2	0								2															
Fluoroquinolones - Ciprofloxacin	0.06	2	0						2																	
Penicillins - Ampicillin	4	2	1											1					1							
Quinolones - Nalidixic acid	16	2	0													2										
Tetracyclines - Tetracycline	8	2	1											1						1						
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									1	1													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	1																	1				1		

Table Antimicrobial susceptibility testing of S. Mikawasima in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Mikawasima	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Minnesota in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Minnesota	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0															1								
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Minnesota in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Minnesota	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Muenchen in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Muenchen	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	3	0									3														
Aminoglycosides - Kanamycin	4	3	0													3										
Aminoglycosides - Streptomycin	32	3	3																		3					
Amphenicols - Chloramphenicol	16	3	0													2	1									
Amphenicols - Florfenicol	16	3	0												1	2										
Cephalosporins - Cefotaxime	0.5	3	0							3																
Fluoroquinolones - Ciprofloxacin	0.06	3	3									1	2													
Penicillins - Ampicillin	4	3	0										1	2												
Quinolones - Nalidixic acid	16	3	0															3								
Tetracyclines - Tetracycline	8	3	0												3											
Trimethoprim	2	3	0										3													
Cephalosporins - Ceftazidime	2	3	0									3														
Polymyxins - Colistin	2	3	0												3											
Sulfonamides - Sulfamethoxazole	256	3	0														1		2							

Table Antimicrobial susceptibility testing of S. Muenchen in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Muenchen	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Altona in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Altona	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1		1												
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0												2											
Amphenicols - Chloramphenicol	16	2	0													1	1									
Amphenicols - Florfenicol	16	2	0												1		1									
Cephalosporins - Cefotaxime	0.5	2	0							1	1															
Fluoroquinolones - Ciprofloxacin	0.06	2	0				1		1																	
Penicillins - Ampicillin	4	2	0											2												
Quinolones - Nalidixic acid	16	2	0													2										
Tetracyclines - Tetracycline	8	2	1												1			1								
Trimethoprim	2	2	0										1	1												
Cephalosporins - Ceftazidime	2	2	0									1	1													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	1																	1				1		

Table Antimicrobial susceptibility testing of S. Altona in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Altona	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Anatum in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Anatum	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Anatum in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Anatum	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	5	5															1	4							
Aminoglycosides - Kanamycin	4	5	2													3	2									
Aminoglycosides - Streptomycin	32	5	4																1		4					
Amphenicols - Chloramphenicol	16	5	0													1	4									
Amphenicols - Florfenicol	16	5	0													4	1									
Cephalosporins - Cefotaxime	0.5	5	0								2	3														
Fluoroquinolones - Ciprofloxacin	0.06	5	5														5									
Penicillins - Ampicillin	4	5	1											1	3				1							
Quinolones - Nalidixic acid	16	5	5																1	4						
Tetracyclines - Tetracycline	8	5	1											1	3					1						
Trimethoprim	2	5	0										5													
Cephalosporins - Ceftazidime	2	5	0										4	1												
Polymyxins - Colistin	2	5	0												5											
Sulfonamides - Sulfamethoxazole	256	5	2																1	2				2		

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kentucky	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	1																1							
Aminoglycosides - Kanamycin	4	1	1														1									
Aminoglycosides - Streptomycin	32	1	1																	1						
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	1														1									
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	1																	1						
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Kentucky	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kentucky in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	2																2							
Aminoglycosides - Kanamycin	4	2	1													1					1					
Aminoglycosides - Streptomycin	32	2	2																		2					
Amphenicols - Chloramphenicol	16	2	1														1			1						
Amphenicols - Florfenicol	16	2	0													1		1								
Cephalosporins - Cefotaxime	0.5	2	0								2															
Fluoroquinolones - Ciprofloxacin	0.06	2	2														2									
Penicillins - Ampicillin	4	2	1											1					1							
Quinolones - Nalidixic acid	16	2	2																	2						
Tetracyclines - Tetracycline	8	2	1												1					1						
Trimethoprim	2	2	1										1						1							
Cephalosporins - Ceftazidime	2	2	0										2													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	1																1					1		

Table Antimicrobial susceptibility testing of S. Kentucky in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kentucky	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Bardo in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bardo	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Bardo in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Bardo	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Braenderup in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Braenderup	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	3	2										1					1	1							
Aminoglycosides - Kanamycin	4	3	1													2		1								
Aminoglycosides - Streptomycin	32	3	2														1				2					
Amphenicols - Chloramphenicol	16	3	2														1			2						
Amphenicols - Florfenicol	16	3	0														1	2								
Cephalosporins - Cefotaxime	0.5	3	0							2	1															
Fluoroquinolones - Ciprofloxacin	0.06	3	0				1		1	1																
Penicillins - Ampicillin	4	3	2												1				2							
Quinolones - Nalidixic acid	16	3	0													3										
Tetracyclines - Tetracycline	8	3	2														1			2						
Trimethoprim	2	3	2										1						2							
Cephalosporins - Ceftazidime	2	3	0									2	1													
Polymyxins - Colistin	2	3	0												3											
Sulfonamides - Sulfamethoxazole	256	3	2																1					2		

Table Antimicrobial susceptibility testing of S. Braenderup in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Braenderup	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Bredeney in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bredeney	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1											
Aminoglycosides - Kanamycin	4	1	0													1									
Aminoglycosides - Streptomycin	32	1	0															1							
Amphenicols - Chloramphenicol	16	1	0														1								
Amphenicols - Florfenicol	16	1	0													1									
Cephalosporins - Cefotaxime	0.5	1	0							1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																
Penicillins - Ampicillin	4	1	0											1											
Quinolones - Nalidixic acid	16	1	0													1									
Tetracyclines - Tetracycline	8	1	0												1										
Trimethoprim	2	1	0										1												
Cephalosporins - Ceftazidime	2	1	0									1													
Polymyxins - Colistin	2	1	0												1										
Sulfonamides - Sulfamethoxazole	256	1	0																	1					

Table Antimicrobial susceptibility testing of S. Bredeney in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Bredeney	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Bredeney in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bredeney	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	1									1														
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	1																	1						
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Bredeney in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Bredeney	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Newport in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Newport	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																		1					

Table Antimicrobial susceptibility testing of S. Newport in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Newport	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Agona in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Agona	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0													1										
Amphenicols - Chloramphenicol	16	1	0													1										
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0											1												
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Agona in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Agona	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Soerenga in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Soerenga	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Soerenga in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Soerenga	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. IIIb in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. IIIb	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										2													
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0															1	1							
Amphenicols - Chloramphenicol	16	2	0													2										
Amphenicols - Florfenicol	16	2	0													2										
Cephalosporins - Cefotaxime	0.5	2	0							2																
Fluoroquinolones - Ciprofloxacin	0.06	2	0				2																			
Penicillins - Ampicillin	4	2	0											2												
Quinolones - Nalidixic acid	16	2	0													2										
Tetracyclines - Tetracycline	8	2	0											1	1											
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																1	1						

Table Antimicrobial susceptibility testing of S. IIIb in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. IIIb	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Senftenberg	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Coeln in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Coeln	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1		1												
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0														2									
Amphenicols - Chloramphenicol	16	2	0														2									
Amphenicols - Florfenicol	16	2	0													2										
Cephalosporins - Cefotaxime	0.5	2	0							2																
Fluoroquinolones - Ciprofloxacin	0.06	2	0						2																	
Penicillins - Ampicillin	4	2	0											2												
Quinolones - Nalidixic acid	16	2	0													2										
Tetracyclines - Tetracycline	8	2	0												2											
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																	2						

Table Antimicrobial susceptibility testing of S. Coeln in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Coeln	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Derby in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	6	0										6													
Aminoglycosides - Kanamycin	4	6	0													6										
Aminoglycosides - Streptomycin	32	6	0															5	1							
Amphenicols - Chloramphenicol	16	6	0														3	3								
Amphenicols - Florfenicol	16	6	0													1	5									
Cephalosporins - Cefotaxime	0.5	6	0								2	4														
Fluoroquinolones - Ciprofloxacin	0.06	6	0				4		2																	
Penicillins - Ampicillin	4	6	0											5	1											
Quinolones - Nalidixic acid	16	6	0													5	1									
Tetracyclines - Tetracycline	8	6	3												1		2	1	2							
Trimethoprim	2	6	0										5	1												
Cephalosporins - Ceftazidime	2	6	0										6													
Polymyxins - Colistin	2	6	0												6											
Sulfonamides - Sulfamethoxazole	256	6	0																	5	1					

Table Antimicrobial susceptibility testing of S. Derby in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Derby	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	65	0									2	36	23	4										
Aminoglycosides - Kanamycin	4	65	63													2					63				
Aminoglycosides - Streptomycin	32	65	6													13	19	8	19	4	2				
Amphenicols - Chloramphenicol	16	65	31														30	4	4	27					
Amphenicols - Florfenicol	16	65	14													22	11	18	9	5					
Cephalosporins - Cefotaxime	0.5	65	0							6	41	15	3												
Fluoroquinolones - Ciprofloxacin	0.06	65	62						2	1		31	28	3											
Penicillins - Ampicillin	4	65	62										1	1	1				62						
Quinolones - Nalidixic acid	16	65	12													2	2	49	10	2					
Tetracyclines - Tetracycline	8	65	65															1		64					
Trimethoprim	2	65	64										1						64						
Cephalosporins - Ceftazidime	2	65	1									5	45	14				1							
Polymyxins - Colistin	2	65	1												64	1									
Sulfonamides - Sulfamethoxazole	256	65	64																			1		64	

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Rissen in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Rissen	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Rissen in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Rissen	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Tennessee	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																			1				

Table Antimicrobial susceptibility testing of S. Tennessee in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Tennessee	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Virchow in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Virchow	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	1										1						1							
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0														1	1								
Amphenicols - Chloramphenicol	16	2	0													1	1									
Amphenicols - Florfenicol	16	2	0													1	1									
Cephalosporins - Cefotaxime	0.5	2	0							1	1															
Fluoroquinolones - Ciprofloxacin	0.06	2	2									2														
Penicillins - Ampicillin	4	2	0											1	1											
Quinolones - Nalidixic acid	16	2	2																	2						
Tetracyclines - Tetracycline	8	2	0											2												
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																2							

Table Antimicrobial susceptibility testing of S. Virchow in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Virchow	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Wien in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Wien	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1												
Aminoglycosides - Kanamycin	4	1	1																		1					
Aminoglycosides - Streptomycin	32	1	0																1							
Amphenicols - Chloramphenicol	16	1	1																	1						
Amphenicols - Florfenicol	16	1	1																1							
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0							1																
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	1																1							
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	1																1							
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Wien in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

S. Wien	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Hadar in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Hadar	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	7	0										4	3												
Aminoglycosides - Kanamycin	4	7	6													1					6					
Aminoglycosides - Streptomycin	32	7	7																	3	4					
Amphenicols - Chloramphenicol	16	7	0														5	2								
Amphenicols - Florfenicol	16	7	0													1	6									
Cephalosporins - Cefotaxime	0.5	7	0									7														
Fluoroquinolones - Ciprofloxacin	0.06	7	7										5	2												
Penicillins - Ampicillin	4	7	7																7							
Quinolones - Nalidixic acid	16	7	7																	7						
Tetracyclines - Tetracycline	8	7	7																	7						
Trimethoprim	2	7	1										5	1					1							
Cephalosporins - Ceftazidime	2	7	0										7													
Polymyxins - Colistin	2	7	0												7											
Sulfonamides - Sulfamethoxazole	256	7	1																4	2				1		

Table Antimicrobial susceptibility testing of S. Hadar in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Hadar	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										2												
Aminoglycosides - Kanamycin	4	2	1													1	1								
Aminoglycosides - Streptomycin	32	2	0															2							
Amphenicols - Chloramphenicol	16	2	0														2								
Amphenicols - Florfenicol	16	2	0													1	1								
Cephalosporins - Cefotaxime	0.5	2	0								2														
Fluoroquinolones - Ciprofloxacin	0.06	2	0						2																
Penicillins - Ampicillin	4	2	0												2										
Quinolones - Nalidixic acid	16	2	0													1	1								
Tetracyclines - Tetracycline	8	2	0												2										
Trimethoprim	2	2	0										2												
Cephalosporins - Ceftazidime	2	2	0										2												
Polymyxins - Colistin	2	2	0												2										
Sulfonamides - Sulfamethoxazole	256	2	0																1	1					

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	17	0									12	5													
Aminoglycosides - Kanamycin	4	17	0													17										
Aminoglycosides - Streptomycin	32	17	0												1		8	8								
Amphenicols - Chloramphenicol	16	17	0														17									
Amphenicols - Florfenicol	16	17	0													3	14									
Cephalosporins - Cefotaxime	0.5	17	1							1	12	3				1										
Fluoroquinolones - Ciprofloxacin	0.06	17	1				4		12			1														
Penicillins - Ampicillin	4	17	1											7	9				1							
Quinolones - Nalidixic acid	16	17	1													16				1						
Tetracyclines - Tetracycline	8	17	0											1	15	1										
Trimethoprim	2	17	0										16		1											
Cephalosporins - Ceftazidime	2	17	1										15	1				1								
Polymyxins - Colistin	2	17	0												17											
Sulfonamides - Sulfamethoxazole	256	17	0																6	9	2					

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Montevideo	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1	1													
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0													1	1									
Amphenicols - Chloramphenicol	16	2	0														2									
Amphenicols - Florfenicol	16	2	0													2										
Cephalosporins - Cefotaxime	0.5	2	0							1	1															
Fluoroquinolones - Ciprofloxacin	0.06	2	1				1					1														
Penicillins - Ampicillin	4	2	0											1	1											
Quinolones - Nalidixic acid	16	2	1													1				1						
Tetracyclines - Tetracycline	8	2	0												2											
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0															1		1						

Table Antimicrobial susceptibility testing of S. Montevideo in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Montevideo	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 6,7:-:1,5	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1	1													
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	0													1		1								
Amphenicols - Chloramphenicol	16	2	0														1	1								
Amphenicols - Florfenicol	16	2	0														1	1								
Cephalosporins - Cefotaxime	0.5	2	0								1		1													
Fluoroquinolones - Ciprofloxacin	0.06	2	2										2													
Penicillins - Ampicillin	4	2	1													1	1									
Quinolones - Nalidixic acid	16	2	2																	2						
Tetracyclines - Tetracycline	8	2	0												1	1										
Trimethoprim	2	2	0											2												
Cephalosporins - Ceftazidime	2	2	0										1	1												
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																	2						

Table Antimicrobial susceptibility testing of S. 6,7:-:1,5 in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. 6,7:-:1,5	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Yovokome in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Yovokome	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	3	0										2	1											
Aminoglycosides - Kanamycin	4	3	0													3									
Aminoglycosides - Streptomycin	32	3	0															2	1						
Amphenicols - Chloramphenicol	16	3	0														3								
Amphenicols - Florfenicol	16	3	0													3									
Cephalosporins - Cefotaxime	0.5	3	0							2	1														
Fluoroquinolones - Ciprofloxacin	0.06	3	0						3																
Penicillins - Ampicillin	4	3	0											3											
Quinolones - Nalidixic acid	16	3	0													1	2								
Tetracyclines - Tetracycline	8	3	0												3										
Trimethoprim	2	3	0										3												
Cephalosporins - Ceftazidime	2	3	0									3													
Polymyxins - Colistin	2	3	0												3										
Sulfonamides - Sulfamethoxazole	256	3	0																1	2					

Table Antimicrobial susceptibility testing of S. Yovokome in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Yovokome	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Ohio	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	9	0									2	6	1												
Aminoglycosides - Kanamycin	4	9	0													9										
Aminoglycosides - Streptomycin	32	9	0													1	8									
Amphenicols - Chloramphenicol	16	9	0														9									
Amphenicols - Florfenicol	16	9	0													3	6									
Cephalosporins - Cefotaxime	0.5	9	0							1	8															
Fluoroquinolones - Ciprofloxacin	0.06	9	0				3		6																	
Penicillins - Ampicillin	4	9	0											9												
Quinolones - Nalidixic acid	16	9	0													9										
Tetracyclines - Tetracycline	8	9	2											1	6					2						
Trimethoprim	2	9	0										9													
Cephalosporins - Ceftazidime	2	9	0									1	8													
Polymyxins - Colistin	2	9	0												9											
Sulfonamides - Sulfamethoxazole	256	9	0																6	3						

Table Antimicrobial susceptibility testing of S. Ohio in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Ohio	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Corvallis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Corvallis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	11	0									3	8													
Aminoglycosides - Kanamycin	4	11	0													11										
Aminoglycosides - Streptomycin	32	11	0													9	2									
Amphenicols - Chloramphenicol	16	11	0													3	8									
Amphenicols - Florfenicol	16	11	0													11										
Cephalosporins - Cefotaxime	0.5	11	0							7	4															
Fluoroquinolones - Ciprofloxacin	0.06	11	3				5		3			3														
Penicillins - Ampicillin	4	11	0											11												
Quinolones - Nalidixic acid	16	11	0													8		3								
Tetracyclines - Tetracycline	8	11	0											2	8	1										
Trimethoprim	2	11	0										11													
Cephalosporins - Ceftazidime	2	11	0									11														
Polymyxins - Colistin	2	11	0												11											
Sulfonamides - Sulfamethoxazole	256	11	0																5	3	3					

Table Antimicrobial susceptibility testing of S. Corvallis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Corvallis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	8	0										7		1											
Aminoglycosides - Kanamycin	4	8	1													7		1								
Aminoglycosides - Streptomycin	32	8	7															1		1	6					
Amphenicols - Chloramphenicol	16	8	2														5	1	1	1						
Amphenicols - Florfenicol	16	8	1													4	1	2	1							
Cephalosporins - Cefotaxime	0.5	8	1							2	3	2		1												
Fluoroquinolones - Ciprofloxacin	0.06	8	2						4	2		2														
Penicillins - Ampicillin	4	8	7											1					7							
Quinolones - Nalidixic acid	16	8	2													3	1	2		2						
Tetracyclines - Tetracycline	8	8	8																3	5						
Trimethoprim	2	8	0										7		1											
Cephalosporins - Ceftazidime	2	8	0									5	3													
Polymyxins - Colistin	2	8	0												8											
Sulfonamides - Sulfamethoxazole	256	8	7																	1				7		

Table Antimicrobial susceptibility testing of S. Typhimurium in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0														1									

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Pigs - fattening pigs - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Pigs - fattening pigs - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0											2												
Aminoglycosides - Kanamycin	4	2	1													1	1									
Aminoglycosides - Streptomycin	32	2	2																		2					
Amphenicols - Chloramphenicol	16	2	0														2									
Amphenicols - Florfenicol	16	2	0													1	1									
Cephalosporins - Cefotaxime	0.5	2	0								1	1														
Fluoroquinolones - Ciprofloxacin	0.06	2	0						2																	
Penicillins - Ampicillin	4	2	2																2							
Quinolones - Nalidixic acid	16	2	0														2									
Tetracyclines - Tetracycline	8	2	2																	2						
Trimethoprim	2	2	0										1	1												
Cephalosporins - Ceftazidime	2	2	0										2													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	2																					2		

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0									1	1													
Aminoglycosides - Kanamycin	4	2	0													2										
Aminoglycosides - Streptomycin	32	2	2																		2					
Amphenicols - Chloramphenicol	16	2	0														2									
Amphenicols - Florfenicol	16	2	0													1	1									
Cephalosporins - Cefotaxime	0.5	2	0								2															
Fluoroquinolones - Ciprofloxacin	0.06	2	0				1		1																	
Penicillins - Ampicillin	4	2	2																2							
Quinolones - Nalidixic acid	16	2	0													1	1									
Tetracyclines - Tetracycline	8	2	2																	2						
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									1	1													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	2																					2		

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Enteritidis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	19	0									8	8	3												
Aminoglycosides - Kanamycin	4	19	0													19										
Aminoglycosides - Streptomycin	32	19	0												1	14	3	1								
Amphenicols - Chloramphenicol	16	19	0													1	18									
Amphenicols - Florfenicol	16	19	0													17	2									
Cephalosporins - Cefotaxime	0.5	19	0							5	12	2														
Fluoroquinolones - Ciprofloxacin	0.06	19	11			1	1		6		2	9														
Penicillins - Ampicillin	4	19	1											7	10	1			1							
Quinolones - Nalidixic acid	16	19	11													7	1			11						
Tetracyclines - Tetracycline	8	19	0											2	17											
Trimethoprim	2	19	0										17	2												
Cephalosporins - Ceftazidime	2	19	0									14	5													
Polymyxins - Colistin	2	19	2												17	2										
Sulfonamides - Sulfamethoxazole	256	19	0															1	10	8						

Table Antimicrobial susceptibility testing of S. Enteritidis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Enteritidis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Livingstone in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Livingstone	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Livingstone in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Livingstone	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. London in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. London	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0											1												
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. London in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. London	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. London in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. London	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	1																		1					
Aminoglycosides - Streptomycin	32	1	1																	1						
Amphenicols - Chloramphenicol	16	1	1																	1						
Amphenicols - Florfenicol	16	1	0															1								
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	1									1														
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	0															1								
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	1																1							
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. London in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. London	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Mbandaka in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Mbandaka	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										2													
Aminoglycosides - Kanamycin	4	2	1													1					1					
Aminoglycosides - Streptomycin	32	2	0															2								
Amphenicols - Chloramphenicol	16	2	1														1		1							
Amphenicols - Florfenicol	16	2	0													1	1									
Cephalosporins - Cefotaxime	0.5	2	0								2															
Fluoroquinolones - Ciprofloxacin	0.06	2	1						1			1														
Penicillins - Ampicillin	4	2	1											1					1							
Quinolones - Nalidixic acid	16	2	0													1	1									
Tetracyclines - Tetracycline	8	2	1												1					1						
Trimethoprim	2	2	1										1						1							
Cephalosporins - Ceftazidime	2	2	0										2													
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	1																		1			1		

Table Antimicrobial susceptibility testing of S. Mbandaka in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Mbandaka	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Mikawasima in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Mikawasima	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										2													
Aminoglycosides - Kanamycin	4	2	1													1	1									
Aminoglycosides - Streptomycin	32	2	0															2								
Amphenicols - Chloramphenicol	16	2	0														2									
Amphenicols - Florfenicol	16	2	0														2									
Cephalosporins - Cefotaxime	0.5	2	0							1	1															
Fluoroquinolones - Ciprofloxacin	0.06	2	0				1		1																	
Penicillins - Ampicillin	4	2	0											1	1											
Quinolones - Nalidixic acid	16	2	0													2										
Tetracyclines - Tetracycline	8	2	0											2												
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	0												2											
Sulfonamides - Sulfamethoxazole	256	2	0																1	1						

Table Antimicrobial susceptibility testing of S. Mikawasima in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Mikawasima	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Mishmarhaemek in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Mishmarhaemek	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	1														1									
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Mishmarhaemek in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Mishmarhaemek	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Altona in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Altona	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																		1					

Table Antimicrobial susceptibility testing of S. Altona in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Altona	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Anatum in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Anatum	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0																1							
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Anatum in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Anatum	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kapemba in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kapemba	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1												
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	1																		1					
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	1										1													
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	1																	1						
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	1																1							
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Kapemba in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kapemba	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kentucky in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																		1					

Table Antimicrobial susceptibility testing of S. Kentucky in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kentucky	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kentucky	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	4	2									1	1					2								
Aminoglycosides - Kanamycin	4	4	0													4										
Aminoglycosides - Streptomycin	32	4	2														2			1	1					
Amphenicols - Chloramphenicol	16	4	0														4									
Amphenicols - Florfenicol	16	4	0													3	1									
Cephalosporins - Cefotaxime	0.5	4	0								3	1														
Fluoroquinolones - Ciprofloxacin	0.06	4	3						1								3									
Penicillins - Ampicillin	4	4	1											3					1							
Quinolones - Nalidixic acid	16	4	3													1				3						
Tetracyclines - Tetracycline	8	4	2												2					2						
Trimethoprim	2	4	0										4													
Cephalosporins - Ceftazidime	2	4	0										4													
Polymyxins - Colistin	2	4	0												4											
Sulfonamides - Sulfamethoxazole	256	4	2																1	1				2		

Table Antimicrobial susceptibility testing of S. Kentucky in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kentucky	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Reading in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Reading	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	1																1							
Aminoglycosides - Kanamycin	4	1	1														1									
Aminoglycosides - Streptomycin	32	1	1																		1					
Amphenicols - Chloramphenicol	16	1	1																	1						
Amphenicols - Florfenicol	16	1	0															1								
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0							1																
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	1																1							
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Reading in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Reading	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bovismorbificans	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	1																		1					
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Bovismorbificans in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Bovismorbificans	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Braenderup in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Braenderup	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	3	0									1	1	1												
Aminoglycosides - Kanamycin	4	3	0													3										
Aminoglycosides - Streptomycin	32	3	0														2	1								
Amphenicols - Chloramphenicol	16	3	0													1	2									
Amphenicols - Florfenicol	16	3	0													3										
Cephalosporins - Cefotaxime	0.5	3	0							2	1															
Fluoroquinolones - Ciprofloxacin	0.06	3	2				1					2														
Penicillins - Ampicillin	4	3	0											3												
Quinolones - Nalidixic acid	16	3	0													1		2								
Tetracyclines - Tetracycline	8	3	0											2	1											
Trimethoprim	2	3	0										3													
Cephalosporins - Ceftazidime	2	3	0									3														
Polymyxins - Colistin	2	3	0												3											
Sulfonamides - Sulfamethoxazole	256	3	0																	3						

Table Antimicrobial susceptibility testing of S. Braenderup in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Braenderup	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Bredeney in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Bredeney	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	4	0										1	1	2											
Aminoglycosides - Kanamycin	4	4	0													4										
Aminoglycosides - Streptomycin	32	4	0														2	1	1							
Amphenicols - Chloramphenicol	16	4	0													1	3									
Amphenicols - Florfenicol	16	4	0													4										
Cephalosporins - Cefotaxime	0.5	4	0							4																
Fluoroquinolones - Ciprofloxacin	0.06	4	0				2		2																	
Penicillins - Ampicillin	4	4	0											3	1											
Quinolones - Nalidixic acid	16	4	0													4										
Tetracyclines - Tetracycline	8	4	0												4											
Trimethoprim	2	4	0										4													
Cephalosporins - Ceftazidime	2	4	0									4														
Polymyxins - Colistin	2	4	0												4											
Sulfonamides - Sulfamethoxazole	256	4	0																2	2						

Table Antimicrobial susceptibility testing of S. Bredeney in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Bredeney	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Cerro in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Cerro	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0													1										
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0											1												
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Cerro in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Cerro	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Newport in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Newport	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	1														1									
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0													1										
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Newport in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Newport	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Kottbus in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Kottbus	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Kottbus in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Kottbus	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Other serovars	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0																1							
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of Other serovars in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Other serovars	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Senftenberg	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	1																		1					
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	1													1										
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Senftenberg in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Senftenberg	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Coeln in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Coeln	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Coeln in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Coeln	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Cubana in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Cubana	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Cubana in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Cubana	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1											
Aminoglycosides - Kanamycin	4	1	1																		1				
Aminoglycosides - Streptomycin	32	1	1																	1					
Amphenicols - Chloramphenicol	16	1	1																	1					
Amphenicols - Florfenicol	16	1	1																1						
Cephalosporins - Cefotaxime	0.5	1	0								1														
Fluoroquinolones - Ciprofloxacin	0.06	1	1										1												
Penicillins - Ampicillin	4	1	1																1						
Quinolones - Nalidixic acid	16	1	0															1							
Tetracyclines - Tetracycline	8	1	1																	1					
Trimethoprim	2	1	1																1						
Cephalosporins - Ceftazidime	2	1	0										1												
Polymyxins - Colistin	2	1	0												1										
Sulfonamides - Sulfamethoxazole	256	1	1																				1		

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	31	0									2	20	9												
Aminoglycosides - Kanamycin	4	31	30													1	1				29					
Aminoglycosides - Streptomycin	32	31	1													5	4	14	7	1						
Amphenicols - Chloramphenicol	16	31	16														15		2	14						
Amphenicols - Florfenicol	16	31	4													10	5	12	4							
Cephalosporins - Cefotaxime	0.5	31	0								25	3	3													
Fluoroquinolones - Ciprofloxacin	0.06	31	29				2					21	8													
Penicillins - Ampicillin	4	31	31																31							
Quinolones - Nalidixic acid	16	31	0													2	2	27								
Tetracyclines - Tetracycline	8	31	31																	31						
Trimethoprim	2	31	31																31							
Cephalosporins - Ceftazidime	2	31	0									1	24	6												
Polymyxins - Colistin	2	31	0												31											
Sulfonamides - Sulfamethoxazole	256	31	31																					31		

Table Antimicrobial susceptibility testing of S. Derby in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Derby	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Rissen in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Rissen	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	19	0										14	4	1											
Aminoglycosides - Kanamycin	4	19	0													19										
Aminoglycosides - Streptomycin	32	19	4														6	2	7	3	1					
Amphenicols - Chloramphenicol	16	19	3													1	14	1		3						
Amphenicols - Florfenicol	16	19	0													3	14	2								
Cephalosporins - Cefotaxime	0.5	19	0								16	3														
Fluoroquinolones - Ciprofloxacin	0.06	19	1				5		13				1													
Penicillins - Ampicillin	4	19	10											2	7				10							
Quinolones - Nalidixic acid	16	19	0													19										
Tetracyclines - Tetracycline	8	19	17												2					17						
Trimethoprim	2	19	12										6	1					12							
Cephalosporins - Ceftazidime	2	19	0									1	17	1												
Polymyxins - Colistin	2	19	0												19											
Sulfonamides - Sulfamethoxazole	256	19	9																3	2	5			9		

Table Antimicrobial susceptibility testing of S. Rissen in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Rissen	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Ughelli in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Ughelli	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Ughelli in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Ughelli	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Virchow in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Virchow	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0													1										
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0				1																			
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0											1												
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Virchow in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Virchow	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Hadar in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Hadar	Turkeys - fattening flocks - before slaughter - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	22	0										16	6											
Aminoglycosides - Kanamycin	4	22	21													1					21				
Aminoglycosides - Streptomycin	32	22	20																2	8	12				
Amphenicols - Chloramphenicol	16	22	5													1	12	4		5					
Amphenicols - Florfenicol	16	22	3													4	14	1	2	1					
Cephalosporins - Cefotaxime	0.5	22	0							1	4	16	1												
Fluoroquinolones - Ciprofloxacin	0.06	22	22									1	11	10											
Penicillins - Ampicillin	4	22	22																22						
Quinolones - Nalidixic acid	16	22	21															1	1	20					
Tetracyclines - Tetracycline	8	22	22																	22					
Trimethoprim	2	22	4										16	2		1			3						
Cephalosporins - Ceftazidime	2	22	0									2	15	5											
Polymyxins - Colistin	2	22	0												22										
Sulfonamides - Sulfamethoxazole	256	22	5															2	11	4				5	

Table Antimicrobial susceptibility testing of S. Hadar in Turkeys - fattening flocks - before slaughter - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

S. Hadar	Turkeys - fattening flocks - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Hessarek in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Hessarek	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. Hessarek in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Hessarek	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0																1							
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Infantis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Industry sampling - animal sample - faeces - quantitative data [Dilution method]

S. Infantis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Meleagridis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Meleagridis	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0											1												
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0									1														
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																		1					

Table Antimicrobial susceptibility testing of S. Meleagridis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Meleagridis	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Meleagridis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Table Antimicrobial susceptibility testing of S. 4,5,12:d:- in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 4,5,12:d:-	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0														1									
Amphenicols - Chloramphenicol	16	1	0															1								
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	1									1														
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	1																	1						
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																		1					

Table Antimicrobial susceptibility testing of S. 4,5,12:d:- in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. 4,5,12:d:-	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. 6,7:b:- in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 6,7:b:-	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0									1														
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. 6,7:b:- in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. 6,7:b:-	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. 1,3,19:i:- in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. 1,3,19:i:-	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0														1									
Cephalosporins - Cefotaxime	0.5	1	0								1															
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0											1												
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0										1													
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																1							

Table Antimicrobial susceptibility testing of S. 1,3,19:i:- in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. 1,3,19:i:-	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Corvallis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Corvallis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	0															1								
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	0												1											
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	0												1											
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	0												1											
Sulfonamides - Sulfamethoxazole	256	1	0																	1						

Table Antimicrobial susceptibility testing of S. Corvallis in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Corvallis	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										1	1												
Aminoglycosides - Kanamycin	4	2	2														1				1					
Aminoglycosides - Streptomycin	32	2	2																		2					
Amphenicols - Chloramphenicol	16	2	1														1			1						
Amphenicols - Florfenicol	16	2	1														1		1							
Cephalosporins - Cefotaxime	0.5	2	0								2															
Fluoroquinolones - Ciprofloxacin	0.06	2	1						1			1														
Penicillins - Ampicillin	4	2	2																2							
Quinolones - Nalidixic acid	16	2	1													1				1						
Tetracyclines - Tetracycline	8	2	2																1	1						
Trimethoprim	2	2	0										2													
Cephalosporins - Ceftazidime	2	2	0									2														
Polymyxins - Colistin	2	2	1												1	1										
Sulfonamides - Sulfamethoxazole	256	2	2																					2		

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	2	0										2												
Aminoglycosides - Kanamycin	4	2	0													2									
Aminoglycosides - Streptomycin	32	2	0															2							
Amphenicols - Chloramphenicol	16	2	0													2									
Amphenicols - Florfenicol	16	2	0													2									
Cephalosporins - Cefotaxime	0.5	2	0							1	1														
Fluoroquinolones - Ciprofloxacin	0.06	2	0						2																
Penicillins - Ampicillin	4	2	0												2										
Quinolones - Nalidixic acid	16	2	0													1	1								
Tetracyclines - Tetracycline	8	2	0												2										
Trimethoprim	2	2	0										2												
Cephalosporins - Ceftazidime	2	2	0									2													
Polymyxins - Colistin	2	2	0												2										
Sulfonamides - Sulfamethoxazole	256	2	0														1			1					

Table Antimicrobial susceptibility testing of S. Typhimurium in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	4	0									1	2	1												
Aminoglycosides - Kanamycin	4	4	0													4										
Aminoglycosides - Streptomycin	32	4	4																		4					
Amphenicols - Chloramphenicol	16	4	0														4									
Amphenicols - Florfenicol	16	4	0														4									
Cephalosporins - Cefotaxime	0.5	4	0							2	2															
Fluoroquinolones - Ciprofloxacin	0.06	4	0						4																	
Penicillins - Ampicillin	4	4	3											1					3							
Quinolones - Nalidixic acid	16	4	0													3	1									
Tetracyclines - Tetracycline	8	4	4																	4						
Trimethoprim	2	4	0										4													
Cephalosporins - Ceftazidime	2	4	0									4														
Polymyxins - Colistin	2	4	0												4											
Sulfonamides - Sulfamethoxazole	256	4	4																					4		

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - broilers - before slaughter - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Gallus gallus (fowl) - broilers - before slaughter - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Pigs - fattening pigs - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	20	2									5	8	5					2							
Aminoglycosides - Kanamycin	4	20	4													16	1	1			2					
Aminoglycosides - Streptomycin	32	20	17														1	1	1		17					
Amphenicols - Chloramphenicol	16	20	0														19	1								
Amphenicols - Florfenicol	16	20	0													9	10	1								
Cephalosporins - Cefotaxime	0.5	20	0							9	8	3														
Fluoroquinolones - Ciprofloxacin	0.06	20	1				2		16	1	1															
Penicillins - Ampicillin	4	20	18											2					18							
Quinolones - Nalidixic acid	16	20	0													13	6	1								
Tetracyclines - Tetracycline	8	20	20																	20						
Trimethoprim	2	20	3										17						3							
Cephalosporins - Ceftazidime	2	20	0									14	6													
Polymyxins - Colistin	2	20	0												20											
Sulfonamides - Sulfamethoxazole	256	20	19																	1				19		

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Pigs - fattening pigs - Domestic - Control and eradication programmes - Official sampling - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

S. Typhimurium, monophasic	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	unknown																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1													
Aminoglycosides - Kanamycin	4	1	0													1										
Aminoglycosides - Streptomycin	32	1	1																		1					
Amphenicols - Chloramphenicol	16	1	0														1									
Amphenicols - Florfenicol	16	1	0													1										
Cephalosporins - Cefotaxime	0.5	1	0							1																
Fluoroquinolones - Ciprofloxacin	0.06	1	0						1																	
Penicillins - Ampicillin	4	1	1																1							
Quinolones - Nalidixic acid	16	1	0													1										
Tetracyclines - Tetracycline	8	1	1																	1						
Trimethoprim	2	1	0										1													
Cephalosporins - Ceftazidime	2	1	0									1														
Polymyxins - Colistin	2	1	1													1										
Sulfonamides - Sulfamethoxazole	256	1	1																					1		

Table Antimicrobial susceptibility testing of S. Typhimurium, monophasic in Gallus gallus (fowl) - laying hens - adult - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

S. Typhimurium, monophasic	Gallus gallus (fowl) - laying hens - adult - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Cut-off values for antibiotic resistance testing of Salmonella in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		32	
Amphenicols	Chloramphenicol		16	
Cephalosporins	Cefotaxime		0.5	
	Ceftazidime		2	
Fluoroquinolones	Ciprofloxacin		0.064	
Penicillins	Ampicillin		8	
Quinolones	Nalidixic acid		16	
Sulfonamides	Sulfonamides		256	
Tetracyclines	Tetracycline		8	
Trimethoprim	Trimethoprim		2	

Table Cut-off values for antibiotic resistance testing of Salmonella in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		32	
Amphenicols	Chloramphenicol		16	
Cephalosporins	Cefotaxime		0.5	
	Ceftazidime		2	
Fluoroquinolones	Ciprofloxacin		0.064	
Penicillins	Ampicillin		8	
Quinolones	Nalidixic acid		16	
Sulfonamides	Sulfonamides		256	
Tetracyclines	Tetracycline		8	
Trimethoprim	Trimethoprim		2	

Table Cut-off values for antibiotic resistance testing of Salmonella in Food

Test Method Used	Standard methods used for testing
Disc diffusion Agar dilution	NCCLS/CLSI

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin	EFSA	2	12
	Kanamycin		8	13
	Streptomycin	NON-EFSA	64	10
	Amikacin			14
Amphenicols	Chloramphenicol	EFSA	16	12
	Florfenicol		16	12
Cephalosporins	3rd generation cephalosporins		1	14
	Cefotaxime	NON-EFSA	5	14
	Ceftazidime	NON-EFSA		
	Cefepime		2	
Fluoroquinolones	Ciprofloxacin	NON-EFSA	1	15
Penicillins	Ampicillin	NON-EFSA	16	13
Quinolones	Nalidixic acid	EFSA	16	13

Table Cut-off values for antibiotic resistance testing of Salmonella in Food

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Sulfonamides	Sulfonamides	EFSA	256	12
Tetracyclines	Tetracycline	EFSA	8	14
Trimethoprim	Trimethoprim	EFSA	2	
Carbapenems	Imipenem			19
Trimethoprim + Sulfonamides	Trimethoprim + Sulfonamides		2	10

Footnote:

Source: Public Health Services of the Autonomous Communities.

2.2 CAMPYLOBACTERIOSIS

2.2.1 General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

History of the disease and/or infection in the country

Campylobacter spp. is at the moment one of the most frequent causes of gastroenteritis in humans.Poultry are the main reservoir, and infection happens usually by consume of poultry meat. Until the end of the 60's importance of Campylobacter spp. was not valued.

Notification of the disease is also infravaluated in surveillance systems. Epidemiology investigations associated cases to poultry meat consume and a deficient handle of food.
The number of human cases in Spain is at the moment supported in the notifications made to Microbiology Information System (SIM).

National evaluation of the recent situation, the trends and sources of infection

Poultry meat is the main source of infection.Another food implicated are red meat, raw milk, non pasteurized cheese, and water.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

More studies need to de developed. In 2013, active monitoring programmes have been performed in broilers, cattle and pigs (national surveys).

Recent actions taken to control the zoonoses

Monitoring of the zoonoses according to Council Directive 2003/99/EEC.

2.2.2 Campylobacteriosis in humans

A. Thermophilic Campylobacter in humans

Reporting system in place for the human cases

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system. During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain. In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.

- Microbiological Information System
The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc.

- Outbreak reporting
In Spain outbreaks are a complementary source of information for the foodborne diseases

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Microbiological Information System
Outbreak reporting System

History of the disease and/or infection in the country

Campylobacter is the second most common cause of bacterial foodborne disease notified to public health authorities in Spain. Despite this, outbreaks of Campylobacter illness are rare in Spain.

Results of the investigation

Campylobacter may be transmitted by food, particularly poultry, unpasteurised milk and contaminated water. In 2012 the number of Campylobacter cases reported to the Microbiological information System was 5488, most of them C. jejuni.

National evaluation of the recent situation, the trends and sources of infection

In recent years Campylobacter has been the most frequently reported zoonotic agent.

Relevance as zoonotic disease

Campylobacter may be transmitted by food, particularly poultry, unpasteurised milk and contaminated water.

2.2.3 Campylobacter in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

The activities are made according to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs) must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling distributed evenly throughout the year

At meat processing plant

Sampling distributed evenly throughout the year

At retail

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughterhouse and cutting plant

fresh meat and skin

At meat processing plant

fresh meat and skin

At retail

fresh meat and skin

Diagnostic/analytical methods used

At slaughterhouse and cutting plant

bacteriological method: ISO 10272:2006

At meat processing plant

Bacteriological method:ISO10272:2006

At retail

Bacteriological method: ISO 10272:2006

Table Campylobacter in other food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni
Meat from pig - fresh - Slaughterhouse	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	14	13	13	
Meat from pig - fresh - Retail	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	100	0		
Meat from bovine animals - fresh - Processing plant [1)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	1	1	1	
Meat from bovine animals - fresh - Retail [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	13	0		
Meat from sheep - fresh - Retail	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	3		1
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - Processing plant [3)]	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	8	0		
Cheeses, made from unspecified milk or other animal milk - fresh	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	53	0		
Eggs - raw material (liquid egg) for egg products	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	16	0		
Meat from goat - fresh - Retail	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	19	3		1
Meat from pig - meat products - Retail [4)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	30	0		
Meat, mixed meat - meat preparation [5)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	200	30	6	5
Meat, mixed meat - minced meat	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	33	1		
Other food (Ready to eat foods.)	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	95	22		

Table Campylobacter in other food

	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from pig - fresh - Slaughterhouse			
Meat from pig - fresh - Retail			
Meat from bovine animals - fresh - Processing plant [1)]			
Meat from bovine animals - fresh - Retail [2)]			
Meat from sheep - fresh - Retail			2
Milk, cows' - raw milk for manufacture - intended for manufacture of raw or low heat-treated products - Processing plant [3)]			
Cheeses, made from unspecified milk or other animal milk - fresh			
Eggs - raw material (liquid egg) for egg products			
Meat from goat - fresh - Retail			2
Meat from pig - meat products - Retail [4)]			
Meat, mixed meat - meat preparation [5)]			19
Meat, mixed meat - minced meat			1
Other food (Ready to eat foods.)			22

Comments:

[1)] Sampling context: Surveillance

[2)] Sampling context: Surveillance

Table Campylobacter in other food

Comments:

[3] Sampling context: Surveillance

[4] Spicy sausage, chorizo...

[5] Marinate pig meat. sausages, bovine burger...

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

Table Campylobacter in poultry meat

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni
Meat from broilers (Gallus gallus) - carcase - Slaughterhouse [1)]	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	96	51	30	4
Meat from broilers (Gallus gallus) - fresh - Processing plant [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	15	4	2	2
Meat from broilers (Gallus gallus) - fresh - Retail [3)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	50	35	6	31
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Retail [4)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	6	0		
Meat from other poultry species - fresh - Processing plant [5)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	4	1		
Meat from other poultry species - fresh - Retail [6)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	2	2	
Meat from other poultry species - fresh - Slaughterhouse	F, L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	10	4	3	1

	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - carcase - Slaughterhouse [1)]			17
Meat from broilers (Gallus gallus) - fresh - Processing plant [2)]			
Meat from broilers (Gallus gallus) - fresh - Retail [3)]			4

Table Campylobacter in poultry meat

	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) - meat products - cooked, ready-to-eat - Retail [4)]			
Meat from other poultry species - fresh - Processing plant [5)]			1
Meat from other poultry species - fresh - Retail [6)]			
Meat from other poultry species - fresh - Slaughterhouse			

Comments:

[1)] Sampling context: Surveillance

[2)] Sampling context: Surveillance

[3)] Sampling context: Surveillance

[4)] Sampling context: Surveillance

[5)] Sampling context: Surveillance

[6)] Sampling context: Surveillance Chilled quail meat.

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES
L: NATIONAL REFERENCE LABORATORY.

2.2.4 Campylobacter in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

Samples have been taken ramdomly (day of sampling each month) in 15 slaughterhouses (distribution of the samples according to capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country.

Frequency of the sampling

At slaughter

between April and October

Type of specimen taken

At slaughter

Faeces

Methods of sampling (description of sampling techniques)

At slaughter

10 cloacal swabs samples have been taken from 10 animals of all the slaughter batches in the day of sampling, with a maximun of 30 batches by day of sampling. Each batch belonged to different flocks.

A total of 2300 samples have been taken, belonging to 230 slaughter batches and 230 different holdings. Samples were refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.

Case definition

At slaughter

A slaughter batch is considered positive for the purpose of this survey if Campylobacter spp. has been isolated from at least one of the 10 samples of the slaughter batch.

Diagnostic/analytical methods used

At slaughter

Other:isolation in agar mCCDA(Oxoid) and agar Campyfood (CFA, bioMerieux) and identification by PCR multiplex.

Vaccination policy

doesn't exist

Other preventive measures than vaccination in place

biosecurity measures, implementation of good higyene practices

Control program/mechanisms

The control program/strategies in place

doesn't exist

Results of the investigation

Number of slaughter batches tested: 230
Number of slaughter batches positive: 143

Slaughter batch prevalence: 62,2% Campylobacter spp.

National evaluation of the recent situation, the trends and sources of infection

Similar prevalence than in previous years.

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

More studies need to be performed

B. thermophilic Campylobacter spp., unspecified in animal - Pigs - fattening pigs

Monitoring system

Frequency of the sampling

2 faecal samples by slaughter batch with 10 animals or more, with a maximun of 30 slaughter batches by slaughterhouse and day of sampling. Each batch belonged to different herds.
Sampling has been performed in 19 slaughterhouses, representing an important part of all the fattening pigs sacrified in Spain (53%).
A total of 460 samples have been taken, belonging to 230 slaughter batches and 230 different holdings.
Samples were refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.
Samples taken from April to October

Type of specimen taken

Faeces

Methods of sampling (description of sampling techniques)

2 faecal material samples by slaughter batch and by holding

Case definition

a slaughter batch is considered as positive if isolation by bacteriological method and PCR identification

Diagnostic/analytical methods used

isolation in agar mCCDA(Oxoid) and agar Campyfood(bioMerieux) and identification by PCR multiplex

Vaccination policy

Doesn't exist

Results of the investigation

Number of slaughter batches tested: 230
Number of slaughter batches positive: 144
Slaughter batch prevalence: 62,6% Campylobacter spp.

National evaluation of the recent situation, the trends and sources of infection

Similar prevalence than in previous years

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

More studies need to be developed

C. thermophilic Campylobacter spp., unspecified in animal - Cattle (bovine animals)

Monitoring system

Sampling strategy

Samples have been taken ramdomly (day of sampling each month)in 18 slaughterhouses (distribution of the samples according to the capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country(52,8%).

Frequency of the sampling

Two faecal samples at colon level have been taken in all the slaughter batches in the day of sampling, with a maximun of 30 batches by slaughterhouse and day of sampling . Each batch belonged to different holdings.

A total of 464 samples have been taken, belonging to 232 slaughter batches and 232 different holdings.

Faeces were taken from the colon, refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.
Sampling from April to October.

Type of specimen taken

Faeces

Methods of sampling (description of sampling techniques)

Faeces were taken from the colon, refrigerated inmediatly and sent to the laboratory and analyzed before 24 hours.

Case definition

One slaughter batch was considered as positive if isolation of Campylobacter spp. by culture and identification by PCR

Diagnostic/analytical methods used

Isolation in agar mCCDA(Oxoid) and agar Campyfood (bioMerieux) and identification by PCR multiplex.

Results of the investigation

Number of slaughter batches analyzed: 232
Number of slaughter batches positive: 117
Slaughter batch prevalence: 50,4%

National evaluation of the recent situation, the trends and sources of infection

Similar prevalence than in previous tears

Table Campylobacter in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Campylobacter	C. coli	C. jejuni	C. lari
Pigs - fattening pigs - Slaughterhouse - Monitoring	MAGRAMA	Objective sampling	Official sampling	animal sample > faeces	Domestic	Slaughter batch	230	144	110		
Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring	MAGRAMA	Objective sampling	Official sampling	animal sample > faeces	Domestic	Slaughter batch	230	143	69	73	
Cattle (bovine animals) - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	MAGRAMA	Objective sampling	Official sampling	animal sample > faeces	Domestic	Slaughter batch	232	117	14	103	

	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Pigs - fattening pigs - Slaughterhouse - Monitoring		34
Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring		1
Cattle (bovine animals) - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications		

2.2.5 Antimicrobial resistance in Campylobacter isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in cattle

Sampling strategy used in monitoring

Frequency of the sampling

see text form on thermophilic Campylobacter spp. in cattle

Type of specimen taken

see text form on thermophilic Campylobacter spp. in cattle

Methods of sampling (description of sampling techniques)

see text form on thermophilic Campylobacter spp. in cattle

Procedures for the selection of isolates for antimicrobial testing

All isolates of the active monitoring programme 2013

Methods used for collecting data

Active monitoring programme 2013.

Laboratory methodology used for identification of the microbial isolates

see text form on thermophilic Campylobacter spp. in cattle

Laboratory used for detection for resistance

Antimicrobials included in monitoring

see table

Cut-off values used in testing

see table

Results of the investigation

Sent trough DCF

B. Antimicrobial resistance in Campylobacter jejuni and coli in pigs

Sampling strategy used in monitoring

Frequency of the sampling

see text form on thermophilic Campylobacter in pigs

Type of specimen taken

see text form on thermophilic Campylobacter in pigs

Methods of sampling (description of sampling techniques)

see text form on thermophilic Campylobacter in pigs

Procedures for the selection of isolates for antimicrobial testing

All the isolates of the active monitoring programme 2013

Methods used for collecting data

Active monitoring programme 2013

Laboratory methodology used for identification of the microbial isolates

see text form on thermophilic Campylobacter in pigs

Laboratory used for detection for resistance

Antimicrobials included in monitoring

see tables of results

Cut-off values used in testing

see table of breakpoints

Results of the investigation

Sent trough DCF

C. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

Sampling strategy used in monitoring

Frequency of the sampling

see text form on thermophilic Campylobacter in Gallus gallus

Type of specimen taken

see text form on thermophilic Campylobacter in Gallus gallus

Methods of sampling (description of sampling techniques)

see text form on thermophilic Campylobacter in Gallus gallus

Procedures for the selection of isolates for antimicrobial testing

All isolates of the active monitoring programme 2013.

Methods used for collecting data

Active monitoring programme 2013.

Laboratory methodology used for identification of the microbial isolates

see text form on thermophilic Campylobacter in Gallus gallus

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Following Commision Decision 2007/516/EC.

Cut-off values used in testing

Following Commision Decision 2007/516/EC.

Results of the investigation

Sent trough DCF

Table Antimicrobial susceptibility testing of Campylobacter in Meat from bovine animals

Campylobacter	C. coli		C. jejuni		Campylobacter spp., unspecified	
Isolates out of a monitoring program (yes/no)					yes	
Number of isolates available in the laboratory	2				2	
Antimicrobials:	N	n	N	n	N	n
Aminoglycosides - Gentamicin					2	0
Fluoroquinolones - Ciprofloxacin					2	1
Macrolides - Erythromycin					2	2
Penicillins - Ampicillin					2	1
Quinolones - Nalidixic acid					2	1
Tetracyclines - Tetracycline					2	2
Fully sensitive					2	0
Resistant to 1 antimicrobial					2	0
Resistant to 2 antimicrobials					2	0
Resistant to 3 antimicrobials					2	1
Resistant to 4 antimicrobials					2	0
Resistant to >4 antimicrobials					2	1

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Campylobacter in Meat from pig

Campylobacter	C. coli		C. jejuni		Campylobacter spp., unspecified	
Isolates out of a monitoring program (yes/no)					yes	
Number of isolates available in the laboratory					2	
Antimicrobials:	N	n	N	n	N	n
Aminoglycosides - Gentamicin					2	0
Fluoroquinolones - Ciprofloxacin					2	2
Macrolides - Erythromycin					2	0
Penicillins - Ampicillin					1	1
Quinolones - Nalidixic acid					2	2
Tetracyclines - Tetracycline					2	2
Fully sensitive					2	0
Resistant to 1 antimicrobial					2	0
Resistant to 2 antimicrobials					2	0
Resistant to 3 antimicrobials					2	1
Resistant to 4 antimicrobials					2	1
Resistant to >4 antimicrobials					2	0
Aminoglycosides - Streptomycin					1	0
Amphenicols - Chloramphenicol					1	0

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of Campylobacter in Meat from broilers (Gallus gallus)

Campylobacter	C. coli		C. jejuni		Campylobacter spp., unspecified	
Isolates out of a monitoring program (yes/no)					yes	
Number of isolates available in the laboratory					116	
Antimicrobials:	N	n	N	n	N	n
Aminoglycosides - Gentamicin					114	2
Fluoroquinolones - Ciprofloxacin					116	106
Macrolides - Erythromycin					116	10
Penicillins - Ampicillin					114	100
Quinolones - Nalidixic acid					116	105
Tetracyclines - Tetracycline					114	88
Fully sensitive					116	2
Resistant to 1 antimicrobial					116	4
Resistant to 2 antimicrobials					116	5
Resistant to 3 antimicrobials					116	28
Resistant to 4 antimicrobials					116	71
Resistant to >4 antimicrobials					116	6

Footnote:

Source of information: Public Health Services of the Autonomous Communities

Table Antimicrobial susceptibility testing of Campylobacter in Meat from other poultry species

Campylobacter	C. coli		C. jejuni		Campylobacter spp., unspecified	
Isolates out of a monitoring program (yes/no)					yes	
Number of isolates available in the laboratory					16	
Antimicrobials:	N	n	N	n	N	n
Aminoglycosides - Gentamicin					16	1
Fluoroquinolones - Ciprofloxacin					16	13
Macrolides - Erythromycin					11	1
Penicillins - Ampicillin					1	1
Quinolones - Nalidixic acid					16	12
Tetracyclines - Tetracycline					16	12
Fully sensitive					16	2
Resistant to 1 antimicrobial					16	1
Resistant to 2 antimicrobials					16	2
Resistant to 3 antimicrobials					16	8
Resistant to 4 antimicrobials					16	3
Resistant to >4 antimicrobials					16	0
Aminoglycosides - Streptomycin					15	2
Amphenicols - Chloramphenicol					15	0

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of Campylobacter spp., unspecified in All foodstuffs - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

Campylobacter spp., unspecified	All foodstuffs																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	26																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	26	1								3	5	6	10	1							1				
Aminoglycosides - Streptomycin		16	16											13	1				2							
Fluoroquinolones - Ciprofloxacin	1	26	20							3	1	2			1	1	11		7							
Penicillins - Ampicillin	8	10	4											1	4		1			1	1	2				
Quinolones - Nalidixic acid	16	26	20												3	1	2		4	5	7	4				
Tetracyclines - Tetracycline	2	26	19							1	2	4							12			7				
Macrolides - Erythromycin	6	26	3										15	5	3							3				

Campylobacter spp., unspecified	All foodstuffs	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	26	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin		
Aminoglycosides - Streptomycin		
Fluoroquinolones - Ciprofloxacin		
Penicillins - Ampicillin		
Quinolones - Nalidixic acid		
Tetracyclines - Tetracycline		

Table Antimicrobial susceptibility testing of Campylobacter spp., unspecified in All foodstuffs - quantitative data [Dilution method]

Campylobacter spp., unspecified	All foodstuffs	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	26	
Antimicrobials:	lowest	highest
Macrolides - Erythromycin		

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of C. coli in Pigs - fattening pigs - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. coli	Pigs - fattening pigs - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	108	12								5	1	62	28				12								
Aminoglycosides - Streptomycin	4	108	86											3	8	11	1	85								
Amphenicols - Chloramphenicol	16	108	0												48	56	4									
Fluoroquinolones - Ciprofloxacin	1	108	101							2	4	1				101										
Quinolones - Nalidixic acid	32	108	100												1	3	3		1	100						
Tetracyclines - Tetracycline	2	108	106									2						106								
Macrolides - Erythromycin	16	108	62										8	11	22	4		1	62							

C. coli	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64

Table Antimicrobial susceptibility testing of C. coli in Pigs - fattening pigs - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

C. coli	Pigs - fattening pigs - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	67	9								3	10	39	6				9								
Aminoglycosides - Streptomycin	4	67	33											13	17	4		33								
Amphenicols - Chloramphenicol	16	67	0												22	39	6									
Fluoroquinolones - Ciprofloxacin	1	67	63							3	1					63										
Quinolones - Nalidixic acid	32	67	59													3	3		2	59						
Tetracyclines - Tetracycline	2	67	66									1						66								
Macrolides - Erythromycin	16	67	29										12	19	7				29							

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	13	0								1		10	2											
Aminoglycosides - Streptomycin	4	13	11											1	1		1	10							
Amphenicols - Chloramphenicol	16	13	0												1	7	5								
Fluoroquinolones - Ciprofloxacin	1	13	13													13									
Quinolones - Nalidixic acid	32	13	12																1	12					
Tetracyclines - Tetracycline	2	13	13															13							
Macrolides - Erythromycin	16	13	2										1	2	6	2			2						

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. jejuni in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. jejuni	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	1	101	2								6	57	36					2							
Aminoglycosides - Streptomycin	2	101	8											76	17	1		7							
Amphenicols - Chloramphenicol	16	101	0												91	8	2								
Fluoroquinolones - Ciprofloxacin	1	101	63							17	18	3				63									
Quinolones - Nalidixic acid	16	101	62												6	26	7			62					
Tetracyclines - Tetracycline	2	101	78									23						78							
Macrolides - Erythromycin	4	101	4										78	15	3	1	1		3						

C. jejuni	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32

Table Antimicrobial susceptibility testing of C. jejuni in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

C. jejuni	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1												
Aminoglycosides - Streptomycin	4	1	1															1							
Amphenicols - Chloramphenicol	16	1	0													1									
Fluoroquinolones - Ciprofloxacin	1	1	1													1									
Quinolones - Nalidixic acid	32	1	1																	1					
Tetracyclines - Tetracycline	2	1	1															1							
Macrolides - Erythromycin	16	1	0											1											

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64

Table Antimicrobial susceptibility testing of C. coli in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - quantitative data [Dilution method]

C. coli	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	1	0										1												
Aminoglycosides - Streptomycin	4	1	1															1							
Amphenicols - Chloramphenicol	16	1	0														1								
Fluoroquinolones - Ciprofloxacin	1	1	0									1													
Quinolones - Nalidixic acid	32	1	0														1								
Tetracyclines - Tetracycline	2	1	1															1							
Macrolides - Erythromycin	16	1	0												1										

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32

Table Antimicrobial susceptibility testing of C. coli in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Domestic - Control and eradication programmes - quantitative data [Dilution method]

C. coli	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Antimicrobial susceptibility testing of C. jejuni in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

C. jejuni	Gallus gallus (fowl) - broilers - Control and eradication programmes																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	unknown																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	1	72	0								22	31	18	1											
Aminoglycosides - Streptomycin	2	72	5											62	5			5							
Amphenicols - Chloramphenicol	16	72	0												55	14	3								
Fluoroquinolones - Ciprofloxacin	1	72	64							4	2	1		1	1	63									
Quinolones - Nalidixic acid	16	72	63												5	2	1	1	3	60					
Tetracyclines - Tetracycline	2	72	64									6	1	1		1		63							
Macrolides - Erythromycin	4	72	2										59	7	4				2						

C. jejuni	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.12	16
Aminoglycosides - Streptomycin	1	16
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.06	4
Quinolones - Nalidixic acid	2	64

Table Antimicrobial susceptibility testing of C. jejuni in Gallus gallus (fowl) - broilers - Domestic - Control and eradication programmes - animal sample - faeces - quantitative data [Dilution method]

C. jejuni	Gallus gallus (fowl) - broilers - Control and eradication programmes	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	unknown	
Antimicrobials:	lowest	highest
Tetracyclines - Tetracycline	0.25	16
Macrolides - Erythromycin	0.5	32

Table Cut-off values used for antimicrobial susceptibility testing of Campylobacter in Food

Test Method Used	Standard methods used for testing
Agar dilution	

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
Fluoroquinolones	Ciprofloxacin		1	
Macrolides	Erythromycin		6	
Penicillins	Ampicillin		8	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		2	
Amphenicols	Chloramphenicol		16	

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		8	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		2	

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		8	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		2	

Table Cut-off values used for antimicrobial susceptibility testing of C. coli in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		8	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		2	

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		4	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		1	

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		4	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		1	

Table Cut-off values used for antimicrobial susceptibility testing of C. jejuni in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		4	
Fluoroquinolones	Ciprofloxacin		0.5	
Macrolides	Erythromycin		4	
Quinolones	Nalidixic acid		16	
Tetracyclines	Tetracycline		1	

2.3 LISTERIOSIS

2.3.1 General evaluation of the national situation

A. Listeriosis general evaluation

History of the disease and/or infection in the country

Listeria monocytogenes has been recognised as a human pathogen for more than 50 years. It causes invasive illness mainly in certain well defined high-risk groups, including immunocompromised persons, pregnant women and neonates. However listeriosis can occur in otherwise healthy individuals, particularly in the setting of an outbreak. The public health importance of listeriosis is not always recognised particularly because listeriosis is a relatively rare disease compared to other common food-borne illnesses such as salmonellosis. Also listeriosis is a disease that clinically affects cattle, but mainly ewes in Spain.

National evaluation of the recent situation, the trends and sources of infection

Listeria is a serious food safety issue, particularly
for pregnant women, the elderly, and those who are
immunocompromised in Spain. In 2012 the number of reported human cases was 107.

Recent actions taken to control the zoonoses

The activities are made according to Regulation (EC) 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs). must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

Sampling is distributed evenly throughout the year.

Additional information

Diagnostic methods used in food : Bacteriological method: ISO 11290-2_:2004.

2.3.2 Listeriosis in humans

A. Listeriosis in humans

Reporting system in place for the human cases

Microbiological Information System

The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc.

Outbreak reporting

In Spain outbreaks are a complementary source of information for foodborne diseases

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Microbiological Information System

Outbreak reporting System

History of the disease and/or infection in the country

Listeria monocytogenes has been recognised in Spain as a human pathogen for more than 50 years. It causes invasive illness mainly in certain well defined high-risk groups, including immunocompromised persons, pregnant women and neonates. However listeriosis can occur in otherwise healthy individuals, particularly in the setting of an outbreak. In 2012 the number of cases reported was 107.

Results of the investigation

Listeriosis is most often found in young children 0-1 years old, especially babies and elder people. Reported Listeria spp. cases concerned Listeria monocytogenes.

National evaluation of the recent situation, the trends and sources of infection

In 2012, 107 cases of listeriosis has been comunicate to Microbiological Information System versus 91 in 2011.

Relevance as zoonotic disease

The public health importance of listeriosis is not always recognised particularly because listeriosis is a relatively rare disease compared to other common food-borne illnesses such as salmonellosis or campylobacteriosis.

2.3.3 Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g
Cheeses, made from mixed milk from cows, sheep and/or goats - hard [1)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	244	8	184	7
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft [2)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	621	6	257	5
Dairy products (excluding cheeses) - butter [3)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	13	2	12	2
Dairy products (excluding cheeses) - cream [4)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	11	0	11	0
Dairy products (excluding cheeses) - dairy products, not specified - ready-to-eat [5)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	235	7	119	6
Milk, cows' - pasteurised milk [6)]	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	102	0	69	0
Milk, cows' - raw milk [7)]	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	22	0	20	0

	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Cheeses, made from mixed milk from cows, sheep and/or goats - hard [1)]	60	1	0
Cheeses, made from mixed milk from cows, sheep and/or goats - soft and semi-soft [2)]	364	1	0
Dairy products (excluding cheeses) - butter [3)]	1	0	0

Table Listeria monocytogenes in milk and dairy products

	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Dairy products (excluding cheeses) - cream [4)]	0	0	0
Dairy products (excluding cheeses) - dairy products, not specified - ready-to-eat [5)]	116	0	1
Milk, cows' - pasteurised milk [6)]	33	0	0
Milk, cows' - raw milk [7)]	2	0	0

Comments:

[1)] Sampling stage: At retail

[2)] Sampling stage: At retail

[3)] Sampling stage: At retail

[4)] Sampling stage: At retail

[5)] Sampling stage: At retail Creme caramel, yoghourt, rice with milk,junket,custard..

[6)] Sampling stage: At retail

[7)] Sampling stage: At processing plant

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES
L: NATIONAL REFERENCE LABORATORY.

Table Listeria monocytogenes in other foods

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g
Ready-to-eat salads [1)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	446	25	240	24
Bakery products [2)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	425	1	201	1
Crustaceans (Cooked.) [3)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	104	1	73	1
Fish - smoked [4)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	421	31	182	19
Foodstuffs intended for special nutritional uses - processed cereal-based food for infants and young children [5)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	1	0	1	0
Fruits - pre-cut [6)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	71	0	21	0
Infant formula [7)]	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	63	0	44	0
Meat from bovine animals - fresh [8)]	L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	3	3	3	3
Meat from bovine animals - meat products - cooked, ready-to-eat - chilled [9)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	19	0	3	0
Meat from broilers (Gallus gallus) - fresh [10)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	2	0	1	0
Meat from other poultry species - meat products - cooked, ready-to-eat [11)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	42	0	8	0
Meat from pig - fresh [12)]	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	61	21	44	21
Meat from pig - meat products - cooked, ready-to-eat [13)]	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	1300	119	715	56
Molluscan shellfish - cooked [14)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	74	6	48	5
Other processed food products and prepared dishes [15)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	4623	103	2809	77

Table Listeria monocytogenes in other foods

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for L. monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g
Vegetables - pre-cut [16)]	F,L	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	145	2	56	2

	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Ready-to-eat salads [1)]	206	1	0
Bakery products [2)]	224	0	0
Crustaceans (Cooked.) [3)]	31	0	0
Fish - smoked [4)]	239	3	9
Foodstuffs intended for special nutritional uses - processed cereal-based food for infants and young children [5)]	0	0	0
Fruits - pre-cut [6)]	50	0	0
Infant formula [7)]	19	0	0
Meat from bovine animals - fresh [8)]	0	0	0
Meat from bovine animals - meat products - cooked, ready-to-eat - chilled [9)]	16	0	0
Meat from broilers (Gallus gallus) - fresh [10)]	1	0	0
Meat from other poultry species - meat products - cooked, ready-to-eat [11)]	34	0	0
Meat from pig - fresh [12)]	17	0	0

Table Listeria monocytogenes in other foods

	Units tested with enumeration method	> detection limit but <= 100 cfu/g	L. monocytogenes > 100 cfu/g
Meat from pig - meat products - cooked, ready-to-eat [13)]	585	51	12
Molluscan shellfish - cooked [14)]	26	0	1
Other processed food products and prepared dishes [15)]	1814	21	5
Vegetables - pre-cut [16)]	89	0	0

Comments:

[1)] Sampling stage: At retail

[2)] Sampling stage: At retail

[3)] Sampling stage: At retail

[4)] Sampling stage: At retail Trout, salmon, cod

[5)] Sampling stage: At retail

[6)] Sampling stage: At retail

[7)] Sampling stage: At retail

[8)] Sampling stage: At retail

[9)] Sampling stage: At retail

[10)] Sampling stage: At slaughtehouse

[11)] Sampling stage: At retail Turkey, broilers, paté.

[12)] Sampling stage: At slaughterhouse

Table Listeria monocytogenes in other foods

Comments:

[13)] Sampling stage: At retail

[14)] Sampling stage: At retail

[15)] Sampling stage: At retail See footnote *

[16)] Sampling stage: At retail

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES
L: NATIONAL REFERENCE LABORATORY

(*) Other processed food products and prepared dishes: black chocolate, tomato sauce, paté, cod, squids, croquette, octopus, vegetal burger, sushi, muesli, pizza...

2.3.4 Listeria in animals

Table Listeria in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Listeria	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals) - dairy cows - Farm - Monitoring	CCAA	Suspect sampling	Not applicable	animal sample > foetus/stillbirth	Domestic	Animal	48	1	1	

2.4 E. COLI INFECTIONS

2.4.1 General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

History of the disease and/or infection in the country

Verotoxigenic Escherichia coli have emerged as foodborne pathogens which can cause severe and potencially fatal illness.Rumiants,specially cattle and sheep, have been implicated as the principal reservoir of VTEC.Transmission happened through consumption of undercooked meat, unpasteurized dairy products, vegetables or water contaminated by rumiant faeces.

In 2007-2011 and 2013 national active monitoring programmes have been performed in young cattle 1-2 years old at slaughterhouse under a herd based approach.

National evaluation of the recent situation, the trends and sources of infection

In cattle, the percentage of animals colonized by strain O157:H7 has been similar in last monitoring programmes.Raw beef products are the main source of infection.
Small rumiants may also represent a source of transmision of VTEC to humans.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

The high percentage of animals colonized by strain O157:H7 in last years agree with growing of human incidence, but outbreaks of the disease are lower at the moment.

Recent actions taken to control the zoonoses

Surveillance of the disease according to Directive 2003/99/EEC. National monitoring programmes 2007-2011 and 2013 in young cattle 1-2 years old.
Compulsory and voluntary monitoring programmes in raw meat of different species of animals, minced meat and meat products, other animal origin products, vegetables and others products.

Additional information

Diagnostic methods used in food:
- Bacteriological method: ISO 16.654:2001.
- Method ELISA
- PCR-Bax

2.4.2 E. coli infections in humans

A. Verotoxigenic Escherichia coli infections in humans

Reporting system in place for the human cases

National Reference laboratory
Outbreak reporting

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Microbiological Information System

National Reference Laboratory

Outbreak reporting
In Spain outbreaks are a complementary source of information for the foodborne diseases.

History of the disease and/or infection in the country

In 2012, the National Reference Laboratory detected 31 cases, 75% serotype O:157

National evaluation of the recent situation, the trends and sources of infection

There is an slightly increasing trend in Spain, the same as the general trend in Europe.

2.4.3 Escherichia coli, pathogenic in foodstuffs

Table VT E. coli in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157
Meat from pig - carcase - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	20	0	0
Meat from pig - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	27	0	0
Meat from bovine animals - carcase - Slaughterhouse - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	650	46	45
Meat from bovine animals - fresh - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	12	0	0
Meat from bovine animals - fresh - Retail - Surveillance	F,L	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	14	1	1
Meat from sheep - carcase - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	11	1	1
Meat from sheep - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	8	1	1
Vegetables - pre-cut - ready-to-eat - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	41	0	0
Fruits - pre-cut - ready-to-eat - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	4	0	0
Seeds, sprouted - ready-to-eat - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	55	0	0
Dairy products, unspecified [1)]	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	20	2	0
Live bivalve molluscs - unspecified	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	29	5	0

Table VT E. coli in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157
Meat from bovine animals - meat products - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	5	0	0
Meat from goat - fresh - Retail - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	6	1	1
Meat from other poultry species - fresh - Retail - Surveillance [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	8	1	1
Meat from pig - meat products - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	10	0	0
Meat from poultry, unspecified - meat products - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	5	1	1
Meat, mixed meat (Mincet meat and meat preparations.) [3)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	553	22	17
Meat, mixed meat - meat products - Surveillance	F	Objective sampling	Official sampling	food sample > meat	Unknown	Unknown	Single	25 g	25	0	0
Milk, cows' - pasteurised milk [4)]	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	4	0	0
Milk, cows' - raw milk [5)]	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	1	0	0
Other food - Surveillance [6)]	F	Objective sampling	Official sampling	food sample	Unknown	Unknown	Single	25 g	136	0	0

	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from pig - carcase - Slaughterhouse - Surveillance	0	0
Meat from pig - fresh - Retail - Surveillance	0	0

Table VT E. coli in food

	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from bovine animals - carcase - Slaughterhouse - Surveillance	0	2
Meat from bovine animals - fresh - Processing plant - Surveillance	0	0
Meat from bovine animals - fresh - Retail - Surveillance	0	0
Meat from sheep - carcase - Slaughterhouse - Surveillance	0	0
Meat from sheep - fresh - Retail - Surveillance	0	0
Vegetables - pre-cut - ready-to-eat - Retail - Surveillance	0	0
Fruits - pre-cut - ready-to-eat - Retail - Surveillance	0	0
Seeds, sprouted - ready-to-eat - Retail - Surveillance	0	0
Dairy products, unspecified [1)]	2	0
Live bivalve molluscs - unspecified	0	5
Meat from bovine animals - meat products - Retail - Surveillance	0	0
Meat from goat - fresh - Retail - Surveillance	0	0
Meat from other poultry species - fresh - Retail - Surveillance [2)]	0	0
Meat from pig - meat products - Surveillance	0	0

Table VT E. coli in food

	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Meat from poultry, unspecified - meat products - Processing plant - Surveillance	0	0
Meat, mixed meat (Mincet meat and meat preparations.) [3)]	3	2
Meat, mixed meat - meat products - Surveillance	0	0
Milk, cows' - pasteurised milk [4)]	0	0
Milk, cows' - raw milk [5)]	0	0
Other food - Surveillance [6)]	0	0

Comments:

[1)] Sampling stage: at retail

[2)] 1 meat sample of quail positive.

[3)] From different species (red meat and poultry)

[4)] Sampling stage: at retail

[5)] Sampling stage: at proccesing plant

[6)] Sampling stage: at retail Ready to eat foods, pizzas, juices...

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES
L: NATIONAL REFERENCE LABORATORY

2.4.4 Escherichia coli, pathogenic in animals

A. Verotoxigenic Escherichia coli in cattle (bovine animals)

Monitoring system

Sampling strategy

Samples have been taken ramdomly (day of sampling each month) in 18 slaughterhouses (distribution of the number of samples according to the capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country (around 52,8%)

Frequency of the sampling

Animals at slaughter (herd based approach)

from April to October

Type of specimen taken

Animals at slaughter (herd based approach)

hair from the brisket area

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

A sample of hair has been taken from one animal in all the slaughter batches in the day of sampling, with a maximun of 30 batches by slaughterhouse and day of sampling .
A total of 150 samples have been taken, belonging to 150 slaughter batches and 150 different holdings.

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

ISO 13.136:2012

Vaccination policy

Results of the investigation

Number of slaughter batches analyzed: 150
Positive : 23 VTEC
slaughter batch prevalence: 15,4%

Table VT E. coli in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Sample weight	Units tested	Total units positive for Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157
Cattle (bovine animals) - Slaughterhouse - Monitoring [1)]	MAGRAMA	Objective sampling	Official sampling	animal sample > hide	Domestic	Detection method	Slaughter batch		150	23	3

	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified
Cattle (bovine animals) - Slaughterhouse - Monitoring [1)]		20

Comments:

[1)] Analytical method: ISO 13.136:2012

2.5 TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1 General evaluation of the national situation

A. Tuberculosis general evaluation

History of the disease and/or infection in the country

Sanitary importance of bovine tuberculosis has been based in the spread of the disease to humans. Human infection has been linked historically to raw milk consumption. At human level the surveillance of the disease is included in National Net of Epidemiological Surveillance, according with Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created.

In Spain, control of milk was carried out at council town's level since 1908, but monitoring and eradication programmes in cattle didn't start systematically until begining of 90's, focused mainly in dairy cows. At the moment the programme is being applied to cattle over six weeks of age,and to goats living close to cattle, according to Directive 64/432/EEC.
Control of milk and control of fresh meat production is carried out by Autonomous Communities according to European legislation in force (hygiene package).

National evaluation of the recent situation, the trends and sources of infection

Spanish programmes for eradication on bovine tuberculosis in last years show the low level of decrease of the disease prevalence in cattle. In 2013 herd prevalence was 1,39% (1,31% in 2012; 1,33% in 2011, 2.14% in 2003, 1.80% in 2004, 1,54% in 2005, 1.76% in 2006 and 1.68% in 2007, 1.59% in 2008, 1,65% in 2009; 1,51% in 2010), with 97.14% of herds qualified as officially free(97,27% in 2012; 95.77% in 2003, 96,56% in 2004, 97.34% in 2005, 96.94% in 2006, 97,20% in 2007, 97,21% in 2008, 96,53% in 2009; 96,49% in 2010; 96,40% in 2011). Animal prevalence in 2012 was 0.28%(0.47% in 2003, 0.40% in 2004, 0.31% in 2005, 0.42% in 2006, 0,49% in 2007, 0.48% in 2008 and 0.41% in 2009; 0,36% in 2010; 0,28% in 2011; 0,23 in 2012). Raw milk only can be consumed if produced in herds OTF.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

Only few human cases had been identified as tuberculosis by Mycobacterium bovis in the last years. The risk of transmission from animals to humans is very low.

Recent actions taken to control the zoonoses

Spanish Programme on Eradication of Bovine Tuberculosis 2013.
Milk control and fresh meat control production are developed according to european legislation in force (Hygiene Package).

Additional information

M. caprae has been isolated in 2005-2013 from cattle, goats, wild boards,foxes, wild ruminants.

2.5.2 Tuberculosis, mycobacterial diseases in humans

A. Tuberculosis due to Mycobacterium bovis in humans

Reporting system in place for the human cases

Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created

Tuberculosis is a compulsory notifiable disease of individualized reporting, according to European recommendations. The information about tuberculosis cases due to M. bovis in humans comes from the National Disease Surveillance System. As the information about M. tuberculosis strain was included recently in the surveillance national guideliness, the coverage is not country-wide representative.

Case definition

Commission Decision 2012/506/EC

Diagnostic/analytical methods used

Commission Decision 2012/506/EC

Notification system in place

Notifiable Disease Surveillance System (NDSS)

History of the disease and/or infection in the country

Only a few cases of infection by M bovis were reported in the last years

National evaluation of the recent situation, the trends and sources of infection

M. bovis infection in humans in Spain is related to foreign-born cases from countries with high prevalence of bovine tuberculosis, and to occupational exposure in nationals. The proportion of tuberculosis cases produced by M. bovis in humans represents less than 1% of the total number of TB cases.

Relevance as zoonotic disease

The risk of obtaining tuberculosis from animal sources is negligible

2.5.3 Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Monitoring system

Sampling strategy

Sampling strategy is defined in Spanish Programme on Eradication on Bovine Tuberculosis 2013, covering cattle according Directive 64/432/EEC(animals over six weeks of age) and goats living close to cattle. Testing is performed under supervision of competent authorities of Autonomous Comunities. At slaughterhouses samples are taken in suspicius animals and in animals with suspicius injures. Strategic use on gamma-interferon assay has been implemented since 2008 and consequently, an increase in the sensivity at animal level (intra-herd) has been applied. A total of 170.410 gamma-interferon tests have been performed in 2013.

Additionally, severe interpretation of skin test(SIT) has been applied in high prevelence areas, with 2 skin tests in OTF herds and at least 3 skin tests in non-OTF herds during 2013. These measures have increased the sensitivity at herd level as well.

More than 211.000 pre-movement tests have been performed in 2013.

Frequency of the sampling

Once a year at least, more frequent testing in not officially free herds (at least 3 tests)and in OTF herds in high prevalence areas (2 at least).

Pre-movement test in movements except if animals go to a closed fattening unit that exclusively send animals to a slaughterhouse.

Type of specimen taken

skin test, blood, organs/tissues

Methods of sampling (description of sampling techniques)

Intradermal skin test (SIT) is used in animals over 6 weeks of age. In infected herds, gamma interferon assay is used in parallel as supplementary test in animals over six months of age. In low prevalence areas, SICCT can be used if specificity problems are detected.

At slaughterhouses organs/tissues are taken from suspicius reactors animals (mainly from herds with OTF status suspended) and from injures found in routine post-mortem examination of animals slaughtered, according to the European legislation in force (Hygiene Package).

Case definition

skin test: positive and inconclusive results. In OTF herds also M. bovis isolation.

Gamma-interferon: positive results, cut-off value 0,05.

Organs/tissues:compatible lesions,auramine+, isolation or positive PCR

Diagnostic/analytical methods used

SIT, SICCT, agent isolation, PCR and gamma-interferon assay following criteria laying down by Annex B of Directive 64/432/EEC.

compatible lesions,auramine+, isolation or positive PCR, spoligotyping,VTNR

Vaccination policy

Forbidden

Other preventive measures than vaccination in place

Premovement test; Cleaning and disinfecting of positive holdings; Control of common grazing areas; Investigation of wildlife in some regions; Epidemiological investigations in breakdowns; inspections and official control of the field veterinarians.

Control program/mechanisms

The control program/strategies in place

Spain has an Eradication Programme approved for co-financing according to Decision 2012/761/UE. Legal basis of the programme measures is Council Directive 64/432/EEC,but with increased measures like:

- more frequent tests in high prevalence areas
- strategic use of gamma-interferon assay
- pre-movement test
- severe interpretation of SIT

Recent actions taken to control the zoonoses

More frequent testing and pre-movement test
Compulsory slaughtering of all animals in herds with high incidence or repeating positive results
Severe interpretation of tuberculin test
Research into other test methodologies
Reinforce over herd registers at farm level
Epidemiological studies
Surveillance of wildlife
Inspections in restricted herds
Inspections of field veterinarians
Training courses for field veterinarians

Suggestions to the European Union for the actions to be taken

Research into other test methodologies and improve the existing ones.

Measures in case of the positive findings or single cases

Confirmation by isolation/PCR of M. bovis. If confirmed, withdrawal of OTF status by holding.
Epidemiological studies, spoligotyping of the strain and inclusion in the National Database micoDB.es.

Notification system in place

Since 1952, at least (Epizootic Diseases Law).At the moment by Animal Health Law 8/2003

Results of the investigation

Herd prevalence: 1,39%
Animal prevalence: 0,28%
Herd incidence: 0,90%
Status of herds: 97,27% OTF

National evaluation of the recent situation, the trends and sources of infection

Data obtained by applying of Spanish Tuberculosis Eradication and Monitoring Programme show a moderate imcrease of the disease at herd level and at animal level in the country in 2013.Trend analysis show a decreasing trend between 2009 and 2013 (Mantel test for trend: p< 0,05).The annual rate of decrease is -4,73% (95% C.I. for relative change = -9,40 to +0,17%).
In dairy herds, the disease is close to eradication, with a herd prevalence of 0,34%. In conclusion, milk consumption can not be considered as a current source of infection in Spain,even more if it is assumed that cow milk is thermally treated.
In herds for meat production, herd prevalence is 1,62%. Explanation of this higher prevalence can be

found in special management of this kind of herds: common grazing, ranching systems, fighting bulls, trashumance... Wildlife and goats can also be a source of infection in these holdings.
The increase in the diagnostic sensitivity in 2008-2013 has important influence in the herd prevalence and incidence, that are higher than other programmes that use less sensitivity diagnostic strategies. Then, comparations between programmes with different diagnostic strategies have to be carefully explained and interpreted.

Table Tuberculosis in other animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis
Sheep	CCAA	Suspect sampling	Official sampling	animal sample > lymph nodes	Domestic	Microbiological tests	Animal	51	6	3	
Goats	CCAA	Suspect sampling	Official sampling	animal sample > lymph nodes	Domestic		Animal	10331	453	102	
Badgers	MAGRAMA	Convenience sampling	Official sampling	animal sample > organ/tissue	Domestic	Microbiological tests	Animal	64	0		
Deer - wild - fallow deer - Hunting - Surveillance	MAGRAMA	Convenience sampling	Official sampling	animal sample > organ/tissue	Domestic	Microbiological tests	Animal	31	12	12	
Deer - wild - red deer - Hunting - Surveillance	MAGRAMA	Convenience sampling	Official sampling	animal sample > organ/tissue	Domestic	Microbiological tests	Animal	871	62	61	
Deer - wild - roe deer - Hunting - Surveillance	MAGRAMA	Convenience sampling	Official sampling	animal sample > organ/tissue	Domestic	Microbiological tests	Animal	34	2	2	
Foxes - wild - Hunting - Surveillance	MAGRAMA	Convenience sampling	Official sampling	animal sample	Domestic	Microbiological tests	Animal	11	1	1	
Wild boars - wild - Hunting - Surveillance	MAGRAMA	Convenience sampling	Official sampling	animal sample > organ/tissue	Domestic	Microbiological tests	Animal	2699	245	224	

	Mycobacterium spp., unspecified	M. caprae
Sheep		3
Goats		351

Table Tuberculosis in other animals

	Mycobacterium spp., unspecified	M. caprae
Badgers		
Deer - wild - fallow deer - Hunting - Surveillance		
Deer - wild - red deer - Hunting - Surveillance		1
Deer - wild - roe deer - Hunting - Surveillance		
Foxes - wild - Hunting - Surveillance		
Wild boars - wild - Hunting - Surveillance		21

Table Bovine tuberculosis - data on herds - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of herds	Total number of herds under the programme	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated	% positive herds depopulated	Indicators		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd Incidence
Andalucía	7023	6551	6040	359	203	20	5.57	92.2	5.94	3.36
Aragón	2807	2707	2533	18	10	1	5.56	93.57	.71	.39
Canarias	1191	1191	982	0	0	0	N.A.	82.45	0	0
Cantabria	7407	7358	7358	65	46	4	6.15	100	.88	.63
Castilla y León	14678	14338	14338	413	293	6	1.45	100	2.88	2.04
Castilla-La Mancha	2975	2372	2132	71	36	3	4.23	89.88	3.33	1.69
Cataluña	5027	4836	4816	2	1	0	0	99.59	.04	.02
Comunidad Foral de Navarra	1668	1663	1662	11	8	0	0	99.94	.66	.48
Comunidad Valenciana	640	604	417	12	10	1	8.33	69.04	2.88	2.4
Comunidad de Madrid	1449	1353	1353	61	32	2	3.28	100	4.51	2.37
España	122691	118462	109417	1526	994	69	4.52	92.36	1.39	.91
Extremadura	9892	9256	9226	418	279	5	1.2	99.68	4.53	3.02
Galicia	41723	41716	35151	43	32	20	46.51	84.26	.12	.09

Table Bovine tuberculosis - data on herds - Community co-financed eradication programmes

Illes Balears	618	618	497	3	2	1	33.33	80.42	.6	.4
La Rioja	307	273	273	1	1	0	0	100	.37	.37
País Vasco	6190	6190	5263	9	9	1	11.11	85.02	.17	.17
Principado de Asturias	18764	17104	17104	35	28	5	14.29	100	.2	.16
Región de Murcia	332	332	272	5	4	0	0	81.93	1.84	1.47
Total : [1)]	245382	236924	218834	3052	1988	138	4.52	92.36	1.39	.91

Comments:

[1)] 0

Table Bovine tuberculosis - data on animals - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of animals	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Slaughtering		Indicators	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered	% coverage at animal level	% positive animals - animal prevalence
Andalucía	499915	477141	456816	456816	5129	5129	6141	95.74	1.12
Aragón	296868	101439	101436	101436	209	209	240	100	.21
Canarias	16456	16456	14847	0	0	0	0	90.22	0
Cantabria	279541	275417	275417	275417	667	667	877	100	.24
Castilla y León	1116152	1047616	1047616	1047616	2208	2159	4672	100	.21
Castilla-La Mancha	381879	233395	233395	233395	854	854	1129	100	.37
Cataluña	559865	435008	433850	255530	40	40	40	99.73	.01
Comunidad Foral de Navarra	110422	91862	91858	91858	300	331	331	100	.33
Comunidad Valenciana	46906	46865	33119	28100	150	150	150	70.67	.45
Comunidad de Madrid	84259	74590	74590	74590	557	557	728	100	.75
España	5756889	4930479	4832234	4614447	13739	13687	19590	98.01	.28
Extremadura	787251	744243	682843	675333	2800	2767	3185	91.75	.41
Galicia	936227	814668	814668	814668	294	284	1161	100	.04

Table Bovine tuberculosis - data on animals - Community co-financed eradication programmes

Illes Balears	30399	22775	22775	22775	6	6	59	100	.03
La Rioja	37759	32225	32225	32225	15	15	15	100	.05
País Vasco	133887	104287	104287	104287	60	60	103	100	.06
Principado de Asturias	373487	355259	355259	355259	442	451	751	100	.12
Región de Murcia	65616	57233	57233	45142	8	8	8	100	.01
Total : [1)]	11513778	9860958	9664468	9228894	27478	27374	39180	98.01	.28

Comments:

[1)] 0

Table Bovine tuberculosis - data on status of herds at the end of the period - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

	Status of herds and animals under the programme													
	Total number of herds and animals under the programme		Unknown		Not free or not officially free				Free or officially free suspended		Free		Officially free	
					Last check positive		Last check negative							
Region	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
Andalucía			528	22895	227	24612	307	22751	17	1944	0	0	5930	420075
Aragón			0	0	0	0	46	4335	13	1756	0	0	2748	284525
Canarias			0	0	0	0	0	0	0	0	0	0	1191	16456
Cantabria			0	0	22	1202	23	983	11	370	0	0	7302	272862
Castilla y León			10	271	469	59491	474	51060	0	0	18	2839	13311	967954
Castilla-La Mancha			0	0	54	9384	51	5879	10	929	0	0	2253	241248
Cataluña			9	135	1	29	3	210	17	1103	0	0	4801	523246
Comunidad Foral de Navarra			0	0	7	597	0	0	1	4	0	0	1655	109481
Comunidad Valenciana			8	57	1	10	2	11	10	1233	0	0	583	45554
Comunidad de Madrid			0	0	29	2595	16	1035	6	204	0	0	1302	70770
España			595	28453	966	119540	1567	125804	218	17761	18	2839	114394	5186158
Extremadura			0	0	108	19074	305	36002	81	8625	0	0	8591	682336
Galicia			22	461	21	1649	62	1987	20	507	0	0	40592	941886

Table Bovine tuberculosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Illes Balears			0	0	0	0	0	0	0	0	0	0	616	30337
La Rioja			0	0	1	111	0	0	0	0	0	0	272	32114
País Vasco			0	0	5	257	2	19	1	164	0	0	6093	126052
Principado de Asturias			0	0	21	529	269	1184	30	736	0	0	16849	360817
Región de Murcia			18	4634	0	0	7	348	1	186	0	0	305	60445
Total : [1)]	0	0	1190	56906	1932	239080	3134	251608	436	35522	36	5678	228788	10372316

Comments:

[1)] 0

2.6 BRUCELLOSIS

2.6.1 General evaluation of the national situation

A. Brucellosis general evaluation

History of the disease and/or infection in the country

Sanitary importance of brucellosis has been based in the spread of the disease to humans.At the moment brucellosis is still the main direct transmission zoonoses in the world, and in Spain as well, mainly linked to Brucella melitensis.The more frecuent source of infection for human beins have been contacts with goats and sheeps, but raw milk products consumption have had historical importance as well.Nowadays brucellosis is considered as a proffesional disease.
In Spain, milk control was carried out at council town's level since 1908. At the moment milk control and control of fresh meat production is carried out by Autonomous Communities according to the european legislation in force (Hygiene Package).
Monitoring and Eradication Programmes in cattle, goats and sheep didn't start systematically until beginig of 90's.Before, human cases had the higest incidence in last thirty years, with arround 8500 cases in middle 80´s.The sistematic application of national programmes has resulted in a continous decrease of the disease in humans.At the moment the Programmes are being applied according to Directive 64/432/EEC and Directive 91/68/EEC.

At human level disease brucellosis is a mandatory notifiable disease since 1943. It is included in National Network of Epidemiology Surveillance, (Royal Decree 2210/1995, december 25), by Epidemiological Surveillance National Net is created.

National evaluation of the recent situation, the trends and sources of infection

Spanish Programmes for eradication and monitoring of Brucellosis in cattle, goats and sheeps show the continous decreasing trend, in general, of the disease prevalence in domestic animals. In 2013 herd prevalence was 0.08% as in 2012(1.45% in 2003; 1.54% in 2004; 1.25% in 2005;0,84% in 2006; 0,57% in 2007; 0,40% in 2008; 0.32% in 2009; 0,20% in 2010; 0,12% in 2011) in cattle and 0.17% (5.58% in 2003; 5.12% in 2004; 4.43% in 2005; 3.20% in 2006: 2,79% in 2007; 2,11% in 2008; 1.64% in 2009; 0,89% in 2010; 0,54% in 2011; 0,26% in 2012) in goats and sheep.Animal prevalence was 0.03% (0.45% in 2003; 0,59% in 2004; 0.37% in 2005;0.22% in 2006; 0,13% in 2007; 0,09% in 2008;0.07% in 2009; 0,05% in 2010; 0,02% in 2011; 0,01% in 2012) in cattle and 0.01% (0.87% in 2003; 0,62% in 2004; 0.45% in 2005; 0,34% in 2006; 0,25% in 2007; 0,15% in 2008; 0.11% im 2009; 0,07% in 2010; 0,04% in 2011; 0,03% in 2012) in goats and sheep.
Raw milk only can be consumed if produced in herds free or officially free.

Recent actions taken to control the zoonoses

Spanish Programme on eradication of bovine brucellosis 2013.
Spanish Programme on eradication of brucellosis in goats and sheep 2013.
Milk control and control of the production of fresh meat in accordance to european legislation in force (Hygiene Package).
Furthermore, the Spanish Royal Decree 640/2006, of May 26, 2006, laying down specific implementation conditions of the Community rules concernig hygiene subjets, as well as foodstuff's production and commercialisation, establishes specific conditions regarding to milk and dairy milk.

Additional information

Since 1992, there has been a sharp decline in the number of human cases, marking the beginning of a new phase of low incidence that has been maintained over the last 15 years

2.6.2 Brucellosis in humans

A. Brucellosis in humans

Reporting system in place for the human cases

Notifiable Disease Surveillance System (NDSS)

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system.
During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain.
In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.
All practising doctors are obliged to notify, both those in the public health service and in private practice, and both those practising outside and within hospitals.

Brucellosis in humans is a disease of compulsory individualized reporting, with a minimum set of variables: age, sex, case classification, etc

Case definition

Commission Decision 2012/506/EC

Diagnostic/analytical methods used

Commission Decision 2012/506/EC

Notification system in place

Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created.

Notifiable Disease Surveillance System (NDSS)

History of the disease and/or infection in the country

As the single zoonotic disease accountable for the greatest number of cases in Spain, brucellosis has been a statutorily notifiable disease since 1943.

The disease is distributed throughout all of Spain's regions, albeit in varying degrees, there are Oficially B. mellitensis free Regions (Asturias, Canary and Balearic Islands, Cantabria, Castilla-León, Galicia and Basque Country), and Oficially Brucellosis free Regions (Canary and Balearic Islands, Basque Country, Murcia and La Rioja).

The disease constitutes a problem, not only from a public health but also from a socio-economic stance. Herein lies the sensitivity surrounding its surveillance, demonstrated by the different Administrations and reflected from the highest echelons in the form of specific legislation designed to control the disease and comply with international commitments

Results of the investigation

From 1943 onwards, the disease time series describes 3 well-differentiated multi-annual waves: the first being from 1943 to 1959, with a maximum incidence rate in 1949 (19,83x100,000 population); the second, a seven-year cycle terminating in 1977, marked by a maximum peak in 1973 with an incidence rate of 20,32x100,000 population; and the last and third cyclical wave, registering a maximum peak in 1984 with a rate of 22.69 per 100,000 population.

The number of human cases reported to the NDSS in 2012 was 87 (70 confirmed).

National evaluation of the recent situation, the trends and sources of infection

In 2012 the incidence was lower than the previous year, in consonance with the sustained downward trend observed in the country.

Epidemic outbreaks of brucellosis aetiology were reported in the last years. The predominant transmission mechanism was direct contact with animals followed by foodftuffs. The foodstuff most frequently associated with the outbreaks was cottage-style cheese.

Relevance as zoonotic disease

High

2.6.3 Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

Free regions

The 2 provinces of the Canary Islands since june 2009; Baleares, Murcia, La Rioja and País Vasco since 2013.

Monitoring system

Sampling strategy

Sampling strategy is defined in Spanish Programme for Eradication of Bovine Brucellosis, covering cattle according to Directive 64/432/EEC(animals over 12 months of age). Test are carried out by competent authorities of Autonomous Communities.At slaughterhouses samples are taken in suspicius animals, mainly in positive animals coming from free or officially free herds (suspended estatus) to confirm the disease.

Frequency of the sampling

Twice a year at least. Only regions with low herd prevalence can apply a reduction of the frequency following Annex A.II.2 of Council Directive 64/432/CEE.
Pre-movement test.

Type of specimen taken

serum, blood, milk, organs/tissues,swabs

Methods of sampling (description of sampling techniques)

In animals over one year of age Rose Bengal as screening test or i-ELISA in milk; and Complement Fixation test or i-ELISA in serum as confirmatory test.As complementary test competition ELISA has been used as well.
At slaughterhouses swabs, organs and tissues are taken in suspicius animals,mainly from herds with free or officially free status suspended, to isolate Brucella and confirm the infection.

Case definition

Positive result to Rose Bengal test confirmed by positive result to Complement Fixation test or ELISA. In high prevalence areas, positive result to any official test. In free or officially free herds Brucella abortus isolation as well.
Positive result of i-Elisa in milk confirmed by serological methods.

Diagnostic/analytical methods used

Rose Bengal test ,agent isolation,serum i-ELISA, milk i-ELISA, c-ELISA and Complement Fixation test, following criteria laying down by Annex B of Directive 64/432/EEC

Vaccination policy

Forbidden in general, but in high prevalence areas vaccination can be authorised with vaccine B-19 or other authorised vaccines(RB-51)according to Directive 64/432/EEC.

Other preventive measures than vaccination in place

Pre-movement test
Cleaning and disinfecting of positive holdings
Control of common grazing areas

Investigation of possible wildlife reservoirs in some regions
Epidemiological investigations in breakdowns
Inspections and official control of field veterinarians
Inspections of restricted herds.

Control program/mechanisms

The control program/strategies in place

Spain has an Eradication and Monitoring Programme approved for co-financing according to Decision 2012/761/UE.
Legal basis of the programme measures is Directive 64/432/EEC and Royal Decree 2611/1996, at last ammended. Increased measures have been implemented:

pre-movement test
stamping out in low prevalence areas
vaccination in high prevalence areas
more frequent testing
inspections and official controls of field veterinarians
inspections of restricted herds

Recent actions taken to control the zoonoses

More frecuent testing and pre-movement test
Compulsory slaughter of all animals in herds with high incidence or repeating positive results, and in low prevalence areas if infection is confirmed
Research into other test methodologies
Reinforce over herd registers at farm level
Epidemiological studies

Suggestions to the European Union for the actions to be taken

Research into other test methodologies and improve existing ones.

Measures in case of the positive findings or single cases

Confirmation of the infection by complement fixation test and culture, and if herd is free or officially free,status is suspended and if isolation of Brucella abortus is confirmed, lost of status by holding and, if the herd is placed in a low plevalence area, depopulation.

Notification system in place

Since 1952, at least(Epizootic Diseases Law)

At the moment by Animal Health Law 8/2003

Results of the investigation

Herd prevalence: 0,08%
Animal prevalence: 0,03%
Herd incidence: 0,06%
Herd status: 98.29% OBF; 0,85% BF

National evaluation of the recent situation, the trends and sources of infection

Data obtained by the implementation of Spanish Eradication and Monitoring Programme on Bovine Brucellosis show a moderate increase of the disease in the country in 2004, following by an important decrease in 2005, 2006 and mainly in 2007, 2008, 2009,2010, 2011 and 2012, mantained in 2013.
Herd prevalence: 2,30%(2002);1,45%(2003);1,54(2004); 1,25%(2005); 0,84%(2006); 0,57 (2007); 0,40(2008); 0,32%(2009); 0,20%(2010); 0,12%(2011);0,08(2012 and 2013).
Animal prevalence: 0,39%(2002);0,45%(2003);0,59%(2004); 0,37% (2005); 0,22(2006); 0,13(2007); 0,09

(2008); 0,07(2009); 0,05%(2010); 0,02% (2011); 0,01 (2012); 0,03 (2013).
Disease is close to eradication in dairy herds.Herd prevalence is below 1%(0,01%).In conclusion, milk consumption can't be considered as a current source of infection in Spain, even more if it is assumed that almost all the cow milk is thermally treated.

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

Brucellosis in humans is linked in Spain mainly to B. melitensis.

B. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

Free regions

Canary Islands by Decision 2001/292/EC

Balearic Islands by Decision 2010/695/EU

Monitoring system

Sampling strategy

see brucella melitensis in sheep

Frequency of the sampling

see brucella melitensis in sheep

Methods of sampling (description of sampling techniques)

see brucella melitensis in sheep

Case definition

see brucella melitensis in sheep

Diagnostic/analytical methods used

see brucella melitensis in sheep

Vaccination policy

see brucella melitensis in sheep

Other preventive measures than vaccination in place

see brucella melitensis in sheep

Control program/mechanisms

The control program/strategies in place

see brucella melitensis in sheep

Recent actions taken to control the zoonoses

see brucella melitensis in sheep

Suggestions to the European Union for the actions to be taken

see brucella melitensis in sheep

Measures in case of the positive findings or single cases

see brucella melitensis in sheep

Notification system in place

see brucella melitensis in sheep

Results of the investigation

see brucella melitensis in sheep

National evaluation of the recent situation, the trends and sources of infection

see brucella melitensis in sheep

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

see brucella melitensis in sheep

C. Brucella melitensis in sheep

Status as officially free of ovine brucellosis during the reporting year

Free regions

Canarias by Decision 2001/292/EC
Baleares by Decision 2010/695/EU
Galicia, Asturias, Cantabria, Castilla y Leon and Pais Vasco since 2013

Monitoring system

Sampling strategy

Sampling strategy is defined in Spanish Programme on eradication and monitoring of brucellosis in sheep and goats, according to Directive 91/68/EEC:
- animals over 6 months of age if not vaccined
- animals over 18 months of age if vaccined
Tests are carried out by competent authorities of Autonomous Communities. At slaughterhouse samples are taken in suspicius animals, mainly in positive animals coming from free or oficially free herds(suspended status)to confirm de disease.

Frequency of the sampling

Once a year at least in herds free or officially free.
Twice a year at least in non qualified herds.

Type of specimen taken

serum, blood, milk, organs/tissues

Methods of sampling (description of sampling techniques)

At herd level, in animals over 6 or 18 months of age Rose Bengal as screening test and Complement Fixation as confirmatory test.
At slaugterhouses or at holdings, swabs, milk, organs or tissues are taken in suspicious animals, mainly from herds with free or officially free status suspended, to isolate Brucella and confirm the infection.

Case definition

Positive result to Rose Bengal confirmed by positive result to Complement Fixation.In infecterd herds, positive results to any official test.
In free or officially free herds Brucella melitensis isolation as well.

Diagnostic/analytical methods used

Rose Bengal test, agent isolation, Complement Fixation test following criteria laying down by Annex C of Directive 91/68/EEC

Vaccination policy

Animals between 3 and 6 months of age (not in officially free herds or free herds that are on the way to gain oficially free status in low prevalence areas)
In high incidence areas adults can be vaccined exceptionally to control the spread of the disease to other herds or humans.

Other preventive measures than vaccination in place

Pre-movement test in trashumance in certain areas
Cleaning and desinfecting of positive holdings
Control of common grazing areas
Epidemiological investigations in breakdowns

Inspections and official control of the field veterinarians

Control program/mechanisms

The control program/strategies in place

Spain has an Eradication Programme approved for co-financing according to Decision 2012/761/UE. Legal basis of the programme measures are Directive 91/68/EEC and Royal Decree 1941/2004.

Recent actions taken to control the zoonoses

More frequent testing in non qualified herds
Compulsory slaughter of all animals in herds with high incidence or repeating positive results
Research in other test methodologies
Reinforce over herd register at farm level
Epidemiological studies

Suggestions to the European Union for the actions to be taken

Research into other test methologies and into other vaccines. Authoritation of new tests (ELISA,FPA)

Measures in case of the positive findings or single cases

Confirmation by complement fixation test, and if herd free or officially free, status is suspended and if isolation of Brucella melitensis, lost of status by holding and depopulation if herd is placed in low prevalence area

Notification system in place

Since 1952, at least(Epizootic Diseases Law)

At the moment by Animal Helth Law 8/2003

Results of the investigation

Herd prevalence: 0.17%
Animal prevalence: 0,03%
Herd incidence: 0,10%
Herd status: 78,99% OMF; 18,66% free

National evaluation of the recent situation, the trends and sources of infection

Data obtained by implementation of Spanish Programme for Eradication and Monitoring of Brucellosis in Sheep and Goats show continous decreasing trend of the disease in the country, following the trends of previous years:
Herd prevalence:7,18%(2002);5,58%(2003);5,12%(2004);4,43%(2005);3,20%(2006); 2,79%(2007); 2,11%(2008);1,64%(2009); 0,89% (2010); 0,54% (2011);0,26% (2012); 0,17(2013).
Animal prevalence:0,98%(2002);0,87%(2003);0,61%(2004);0,45%(2005);0,34%(2006);0,25%(2007); 0,15%(2008); 0,11%(2009); 0,07% (2010); 0,04% (2011); 0,03% (2012 and 2013).

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

The human cases have been identified mainly as Brucella melitensis, caused by direct contact between humans and infected herds, as a professional disease (farmers, veterinary surgeons...).

Table Brucellosis in other animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Brucella	B. abortus	B. melitensis	B. suis
Pigs	CCAA	Suspect sampling	Official sampling	animal sample > organ/tissue	Domestic	Herd	7	2			
Deer - wild - red deer - Hunting - Surveillance	MAGRAMA	Objective sampling	Official sampling	animal sample > organ/tissue	Domestic	Animal	355	0			
Deer - wild - roe deer - Hunting - Surveillance	MAGRAMA	Objective sampling	Official sampling	animal sample > organ/tissue	Domestic	Animal	18	0			
Mouflons - wild - Hunting - Surveillance	MAGRAMA	Objective sampling	Official sampling	animal sample > organ/tissue	Domestic	Animal	7	0			
Wild boars - wild - Hunting - Surveillance	MAGRAMA	Objective sampling	Official sampling	animal sample > organ/tissue	Domestic	Animal	1324	38			

	Brucella spp., unspecified	B. suis - biovar 2
Pigs		2
Deer - wild - red deer - Hunting - Surveillance		
Deer - wild - roe deer - Hunting - Surveillance		
Mouflons - wild - Hunting - Surveillance		
Wild boars - wild - Hunting - Surveillance		38

Table Brucellosis in other animals

Table Bovine brucellosis - data on herds - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of herds	Total number of herds under the programme	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated	% positive herds depopulated	Indicators		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd Incidence
Andalucía	6986	6986	5925	0	0	0	N.A.	84.81	0	0
Aragón	2807	2807	2669	0	0	0	N.A.	95.08	0	0
Canarias	1191	1191	371	0	0	0	N.A.	31.15	0	0
Cantabria	7407	7358	7358	24	17	8	33.33	100	.33	.23
Castilla y León	14678	14338	14338	47	39	3	6.38	100	.33	.27
Castilla-La Mancha	2975	2975	2261	0	0	0	N.A.	76	0	0
Cataluña	5027	5027	4998	0	0	0	N.A.	99.42	0	0
Comunidad Foral de Navarra	1668	1668	1667	0	0	0	N.A.	99.94	0	0
Comunidad Valenciana	640	604	458	0	0	0	N.A.	75.83	0	0
Comunidad de Madrid	1449	1449	1449	0	0	0	N.A.	100	0	0
España	122654	121586	110010	91	70	12	13.19	90.48	.08	.06
Extremadura	9892	9256	9201	20	14	1	5	99.41	.22	.15
Galicia	41723	41716	34823	0	0	0	N.A.	83.48	0	0

Table Bovine brucellosis - data on herds - Community co-financed eradication programmes

Illes Balears	618	618	328	0	0	0	N.A.	53.07	0	0
La Rioja	307	307	307	0	0	0	N.A.	100	0	0
País Vasco	6190	6190	5064	0	0	0	N.A.	81.81	0	0
Principado de Asturias	18764	18764	18764	0	0	0	N.A.	100	0	0
Región de Murcia	332	332	29	0	0	0	N.A.	8.73	0	0
Total : [1)]	245308	243172	220020	182	140	24	13.19	90.48	.08	.06

Comments:

[1)] 0

Table Ovine or Caprine brucellosis - data on herds - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of herds	Total number of herds under the programme	Number of herds checked	Number of positive herds	Number of new positive herds	Number of herds depopulated	% positive herds depopulated	Indicators		
								% herd coverage	% positive herds Period herd prevalence	% new positive herds Herd Incidence
Andalucía	18158	18113	16349	90	54	13	14.44	90.26	.55	.33
Aragón	3975	3975	3876	1	0	0	0	97.51	.03	0
Canarias	2321	2321	633	0	0	0	N.A.	27.27	0	0
Cantabria	4346	4344	1048	0	0	0	N.A.	24.13	0	0
Castilla y León	12439	12439	5634	0	0	0	N.A.	45.29	0	0
Castilla-La Mancha	6316	6316	6102	24	16	5	20.83	96.61	.39	.26
Cataluña	3640	3510	3473	17	7	2	11.76	98.95	.49	.2
Comunidad Foral de Navarra	2564	2546	1050	0	0	0	N.A.	41.24	0	0
Comunidad Valenciana	1486	1379	1263	0	0	0	N.A.	91.59	0	0
Comunidad de Madrid	684	670	670	2	2	2	100	100	.3	.3
España	115017	108618	87886	153	90	24	15.69	80.91	.17	.1
Extremadura	15551	14631	14381	6	2	1	16.67	98.29	.04	.01
Galicia	22311	22311	22311	1	1	1	100	100	0	0

Table Ovine or Caprine brucellosis - data on herds - Community co-financed eradication programmes

Illes Balears	4563	4563	1124	0	0	0	N.A.	24.63	0	0
La Rioja	427	419	143	0	0	0	N.A.	34.13	0	0
País Vasco	7674	7674	6503	0	0	0	N.A.	84.74	0	0
Principado de Asturias	6483	1381	1381	0	0	0	N.A.	100	0	0
Región de Murcia	2079	2026	1945	12	8	0	0	96	.62	.41
Total : [1)]	230034	217236	175772	306	180	48	15.69	80.91	.17	.1

Comments:

[1)] 0

Table Bovine brucellosis - data on animals - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of animals	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Slaughtering		Indicators	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered	% coverage at animal level	% positive animals - animal prevalence
Andalucía	492958	483983	346034	346034	0	0	2	71.5	0
Aragón	296868	72195	72193	72202	0	0	0	100	0
Canarias	16456	16456	2613	2613	0	0	0	15.88	0
Cantabria	279541	227360	227360	227360	42	42	719	100	.02
Castilla y León	1116152	765129	765129	765129	891	887	1432	100	.12
Castilla-La Mancha	381879	159222	159222	159222	0	0	0	100	0
Cataluña	559865	193322	192263	192263	10	10	10	99.45	.01
Comunidad Foral de Navarra	110422	70029	70025	70025	0	1	1	99.99	0
Comunidad Valenciana	46906	46906	36440	29375	0	0	0	77.69	0
Comunidad de Madrid	84259	58253	58253	58253	1	1	1	100	0
España	5749932	3705211	3507837	3469748	1005	1033	2274	94.67	.03
Extremadura	787251	547492	513441	505521	61	92	100	93.78	.01
Galicia	936227	669446	669446	669446	0	0	7	100	0

Table Bovine brucellosis - data on animals - Community co-financed eradication programmes

Illes Balears	30399	15637	15637	1904	0	0	0	100	0
La Rioja	37759	18600	18600	18600	0	0	0	100	0
País Vasco	133887	81827	81827	72447	0	0	0	100	0
Principado de Asturias	373487	279157	279157	279157	0	0	1	100	0
Región de Murcia	65616	197	197	197	0	0	1	100	0
Total : [1)]	11499864	7410422	7015674	6939496	2010	2066	4548	94.67	.03

Comments:

[1)] 0

Table Ovine or Caprine brucellosis - data on animals - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

Region	Total number of animals	Number of animals to be tested under the programme	Number of animals tested	Number of animals tested individually	Number of positive animals	Slaughtering		Indicators	
						Number of animals with positive result slaughtered or culled	Total number of animals slaughtered	% coverage at animal level	% positive animals - animal prevalence
Andalucía	3080920	2953131	2001796	2001796	2291	2291	4633	67.79	.11
Aragón	1475377	1407728	1398496	1398496	1	32	41	99.34	0
Canarias	294261	294261	42673	0	0	0	0	14.5	0
Cantabria	76670	76670	23815	23815	0	0	4	31.06	0
Castilla y León	3198856	552897	552897	552897	0	0	26	100	0
Castilla-La Mancha	2784306	2784306	2784306	1307017	685	685	1428	100	.02
Cataluña	553826	449017	445899	445899	132	148	686	99.31	.03
Comunidad Foral de Navarra	549215	199906	199906	58080	0	0	0	100	0
Comunidad Valenciana	407196	391156	360444	162882	0	0	0	92.15	0
Comunidad de Madrid	78705	77366	77366	77366	64	64	517	100	.08
España	17984626	13057174	11742697	9098000	4029	4037	8856	89.93	.03
Extremadura	3685354	2897153	2883047	2275455	608	589	1193	99.51	.02
Galicia	261996	236162	236162	236162	6	6	106	100	0

Table Ovine or Caprine brucellosis - data on animals - Community co-financed eradication programmes

Illes Balears	328028	75900	75900	32168	0	0	0	100	0
La Rioja	117305	37466	37466	17766	0	0	0	100	0
País Vasco	283643	140736	140736	140736	0	0	0	100	0
Principado de Asturias	99368	19819	19819	19819	0	0	0	100	0
Región de Murcia	709600	463500	461969	347646	242	222	222	99.67	.05
Total : [1)]	35969252	26114348	23485394	18196000	8058	8074	17712	89.93	.03

Comments:

[1)] 0

Table Bovine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

	Status of herds and animals under the programme													
	Total number of herds and animals under the programme		Unknown		Not free or not officially free				Free or officially free suspended		Free		Officially free	
					Last check positive		Last check negative							
Region	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
Andalucía			277	9760	0	0	45	1126	0	0	0	0	6664	481391
Aragón			0	0	0	0	0	0	0	0	0	0	2807	290616
Canarias			0	0	0	0	0	0	0	0	0	0	1191	16456
Cantabria			0	0	9	899	2	101	13	601	0	0	7334	225759
Castilla y León			10	458	37	3981	247	12864	0	0	933	76916	13055	987396
Castilla-La Mancha			0	0	0	0	0	0	0	0	0	0	2973	381879
Cataluña			19	1024	0	0	3	107	7	373	0	0	4993	549511
Comunidad Foral de Navarra			0	0	0	0	0	0	1	4	0	0	1667	110418
Comunidad Valenciana			4	32	0	0	3	21	2	32	0	0	595	46821
Comunidad de Madrid			0	0	0	0	0	0	0	0	0	0	1409	58253
España			314	11293	49	5295	552	19779	106	7281	1008	87504	116500	5411842
Extremadura			0	0	3	415	98	4626	61	5994	75	10588	8848	724414
Galicia			4	19	0	0	1	0	2	45	0	0	40710	946426

Table Bovine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Illes Balears			0	0	0	0	0	0	0	0	0	0	616	30337
La Rioja			0	0	0	0	0	0	0	0	0	0	307	18600
País Vasco			0	0	0	0	0	0	0	0	0	0	6084	121641
Principado de Asturias			0	0	0	0	153	934	20	232	0	0	16916	356311
Región de Murcia			0	0	0	0	0	0	0	0	0	0	331	65613
Total : [1)]	0	0	628	22586	98	10590	1104	39558	212	14562	2016	175008	233000	10823684

Comments:

[1)] 0

Table Ovine or Caprine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

If present, the row "Total -1" refers to analogous data of the previous year.

	Status of herds and animals under the programme													
	Total number of herds and animals under the programme		Unknown		Not free or not officially free				Free or officially free suspended		Free		Officially free	
					Last check positive		Last check negative							
Region	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
Andalucía			8	200	43	20716	1159	73732	21	7843	10994	2021072	5715	935026
Aragón			0	0	0	0	0	0	99	7734	0	0	3876	1467643
Canarias			0	0	0	0	0	0	0	0	0	0	2321	294261
Cantabria			0	0	0	0	0	0	0	0	0	0	4344	76670
Castilla y León			0	0	0	0	0	0	0	0	0	0	12439	3198856
Castilla-La Mancha			0	0	8	6047	18	5736	10	4583	1831	812113	4448	1955817
Cataluña			11	59	7	3257	152	9585	25	3136	2572	375735	742	89769
Comunidad Foral de Navarra			0	0	0	0	0	0	0	0	0	0	2546	549215
Comunidad Valenciana			13	2729	0	0	22	1399	12	3422	815	264772	517	118834
Comunidad de Madrid			0	0	0	0	51	1629	0	0	168	16956	449	58264
España			42	3003	70	40434	2271	140624	271	38484	21068	4937952	89204	12449046
Extremadura			0	0	2	990	675	20066	66	2521	3067	928945	10661	2648560
Galicia			10	15	0	0	0	0	28	1233	0	0	21869	236013

Table Ovine or Caprine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Illes Balears			0	0	0	0	0	0	0	0	0	0	4563	328028
La Rioja			0	0	0	0	0	0	0	0	0	0	419	37466
País Vasco			0	0	0	0	0	0	0	0	0	0	7674	283643
Principado de Asturias			0	0	0	0	0	0	0	0	0	0	6483	99368
Región de Murcia			0	0	10	9424	194	28477	10	8012	1621	518359	138	71613
Total : [1)]	0	0	84	6006	140	80868	4542	281248	542	76968	42136	9875904	178408	24898092

Comments:

[1)] 0

2.7 YERSINIOSIS

2.7.1 General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

History of the disease and/or infection in the country

Microbiolgical Surveillance System was the Spanish surveillance system for epidemiological surveillance of yersinia infection in humans. It is based on the number of incident cases sent by hospital laboratories to Microbiological Information System (National Centre of Epidemiology).

National evaluation of the recent situation, the trends and sources of infection

The number of Yersinia enterocolitica human cases reported to the Microbiological Information System was 220 in 2012, versus 264 cases in 2011.

At animal level, an active monitoring programme in fattening pigs at slaughter in 2013 detected Y. enterocolítica in 38,7% of the slaughter batches tested. All the strains belonged to biotype 4 serotype O:3.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

Animals are the main source of Yersinia. Fecal wastes from animals (particularly pigs) may contaminate water, milk and foods and become a source of infection for people or other animals.

Recent actions taken to control the zoonoses

The activities are made according to Regulation (EC) no 178/2002. (i.e. rapid alert system, traceability of food, feed, food-producing animals and all substances incorporated into foodstuffs). Controls must be established at all stages of production, processing and distribution. To this end, business operators are required to apply appropriate systems and procedures.

At animal level, active monitoring programmeshave been performed in pigs at slaugtherhouse in 2007-2011 and 2013.

2.7.2 Yersiniosis in humans

A. Yersinosis in humans

Reporting system in place for the human cases

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system.

In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.

- Microbiological Information System
The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc.

- Outbreak reporting System
In Spain outbreaks are a complementary source of information for the foodborne diseases.

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Microbiological Information System
Outbreak Reporting System

History of the disease and/or infection in the country

Yersinia is the third most common cause of bacterial gastrointestinal infection in Spain

Results of the investigation

The number of cases of Y. enterocolitica reported has increased steadily since it was made notifiable in 1989.
In 2012 the number of human cases reported was 220, versus 264 in 2011.

National evaluation of the recent situation, the trends and sources of infection

Infants and young adults are particularly likely to be infected. More than 50% are in the groups less of five years.

It is usually transmitted to humans via consumption of food contaminated with animal feces.

Relevance as zoonotic disease

Enteric yersiniosis can be transmitted between animals and humans.

Yersiniosis have a high relevance as zoonotic disease.

2.7.3 Yersinia in foodstuffs

Table Yersinia in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis
Meat from pig - carcase - Slaughterhouse [1)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	17	0	0	0
Meat from pig - fresh - Retail [2)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	93	9	7	0
Meat from pig - fresh - Processing plant [3)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	17	3	0	0
Meat from bovine animals - fresh - Retail [4)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	12	4	4	0
Meat from other poultry species - fresh - chilled - Retail [5)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	4	1	1	0
Meat from sheep - fresh - Retail	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	0	0	0
Meat, mixed meat - meat preparation [6)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	94	12	12	0
Meat, mixed meat - minced meat [7)]	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	9	1	1	0

	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - unspecified
Meat from pig - carcase - Slaughterhouse [1)]	0	0	0	0
Meat from pig - fresh - Retail [2)]	2	0	0	7
Meat from pig - fresh - Processing plant [3)]	3	0	0	0
Meat from bovine animals - fresh - Retail [4)]	0	0	0	4

Table Yersinia in food

	Yersinia spp., unspecified	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - unspecified
Meat from other poultry species - fresh - chilled - Retail [5)]	0	0	0	1
Meat from sheep - fresh - Retail	0	0	0	0
Meat, mixed meat - meat preparation [6)]	0	0	0	12
Meat, mixed meat - minced meat [7)]	0	0	0	1

Comments:

[1)] Sampling context: Surveillance Analytical method: Unknown.

[2)] Sampling context: Surveillance Analytical method: Unknown.

[3)] Sampling context: Surveillance Analytical method: Unknown.

[4)] Sampling context: Surveillance Analytical method: Unknown.

[5)] Quail. Sampling context: Surveillance. Analytical method: Unknown.

[6)] See footnote * Sampling context: Surveillance. Analytical method: Unknown.

[7)] Sampling context: Surveillance. Analytical method: Unknown. Positive: bovine minced meat

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

(*) Meat preparations positives: 1 marinate pig meat, 3 bovine burger meat, 5 bovine/pig burger meat and 3 fresh broiler meat sausages.

2.7.4 Yersinia in animals

A. Yersinia enterocolitica in pigs

Monitoring system

Sampling strategy

Animals at slaughter (herd based approach)

Samples have been taken ramdomly (day of each month) in 19 slaughterhouses (distribution of the number of samples according to the capacity of sacrifice of each slaughterhouse)placed in different regions of Spain and representative of the total volume of sacrifice of the country(53%)

Frequency of the sampling

Animals at slaughter (herd based approach)

between April and October

Type of specimen taken

Animals at slaughter (herd based approach)

tonsils

Methods of sampling (description of sampling techniques)

Animals at slaughter (herd based approach)

One sample of tonsils have been taken from all the slaughter batches in the day of sampling, with a maximun of 30 batches by slaughterhouse and day of sampling . Each batch belonged to different herds. A total of 230 samples have been taken, belonging to 230 slaughter batches and 230 different holdings. Samples were refrigerated immediatly and sent to the laboratory and analyzed within 24 hours.

Case definition

Animals at slaughter (herd based approach)

isolation of Yersinia in the sample of tonsils

Diagnostic/analytical methods used

Animals at slaughter (herd based approach)

ISO 10273:2003

Results of the investigation

Fattening pigs at slaughterhouses:
Tested slaughter batches: 230
Positive: 89
Slaughter batch prevalence: 38,7% Yersinia enterocolítica.

Table Yersinia in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Yersinia	Y. enterocolitica	Y. pseudotuberculosis	Yersinia spp., unspecified
Pigs - fattening pigs - Slaughterhouse - Monitoring	MAGRAMA	Objective sampling	Official sampling	animal sample > tonsil	Domestic	Slaughter batch	230	89	89		

	Y. enterocolitica - O:3	Y. enterocolitica - O:9	Y. enterocolitica - unspecified
Pigs - fattening pigs - Slaughterhouse - Monitoring	89		

2.8 TRICHINELLOSIS

2.8.1 General evaluation of the national situation

A. Trichinellosis general evaluation

History of the disease and/or infection in the country

Trichinellosis is a notifiable zoonosis, which causes two to three outbreaks per year in Spain. In 1995, the National Network of Epidemiological Surveillance (NNES) developed a standard protocol to detect every single case of trichinellosis, and notify the health authorities as quickly as possible when an outbreak occurs

National evaluation of the recent situation, the trends and sources of infection

Sources of infection are mainly associated to the consume of meat and raw meat products of wild boars killed in hunting or pigs slaughtered at home and which carcasses has not been examinated post-mortem.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

Most cases are caused by Trichinella spiralis. Trichinella britovi has previously been associated with outbreaks due to the consumption of boar meat, and meat from other wild animals but in the last years T britovi was associated with pork meat and transmitted through the consumption of meat from a domestic pig.

Recent actions taken to control the zoonoses

The activities against this zoonoses are the Official Control:

Examination of fresh meat and killed in hunting according to European legislation in force:

Commission Regulation (EC) Number 2075/2005 of December 5, 2005 laying down specific rules on official controls for trichinella in meat and Commission Regulation (EC) Number 1665/2006 amending Comission Regulation (EC) Number 2075/2005)

Domestic killing for self consumption and wild game meat to be sold at retail is regulated by the Spanish Royal Decree 640/2006, of May 26, 2006, laying down specific implementation conditions of the Communities rules concerning hygiene subjets, as well as foodstuff's production and commercialisation.

According to article seven of the Commission Regulation (EC) Number 2075/2005 of December 5, 2005, laying down specific rules on official controls for Trichinella in meat, Spain has prepared a contingency plan outlining all action to be taken when samples referred to in articles 2 and 16 test are positive to Trichinella. This plan includes details covering:

(a)traceability of infested carcass(s);

(b)measures for dealing with infested carcass(s) and parts thereof;

(c)investigation of the source of investigation and any spreading among wildlife;

(d)any measures to be taken at retail or consumer level;

(e)measures to be taken where the infested carcass(s) cannot be identified at the slaughterhouse;

(f)determination of the Triquinella species involved.

In Spain the Triquinella examination is compulsory for meat from trichinella susceptible species, including domestic killing for self-consumption.

2.8.2 Trichinellosis in humans

A. Trichinellosis in humans

Reporting system in place for the human cases

- Outbreak reporting

In Spain outbreaks are the main source of information for some foodborne diseases.
The notification of outbreaks is mandatory and standardised.

The results of the statistical and epidemiological analysis are disseminated in annual reports. In addition they are published in epidemiological bulletins (national, regional and other). Outbreak investigations as well as necessary control measures are carried out by the health authorities of the autonomous regions.

Case definition

Decision No. 2012/506/EC

Diagnostic/analytical methods used

Decision No. 2012/506/EC

Notification system in place

Outbreak Reporting System Notifiable Disease Surveillance System (NDSS)

In Spain the main source of information of trichinellosis is the notification of outbreaks. This notification has been compulsory by law for all doctors since 1982. It includes disease outbreaks of any origin, not only those related to food outbreak reporting
In Spain outbreaks are the main source of information for trichinellosis.
The notification of outbreaks is mandatory and standardised. All the outbreaks must be reported immediately at the regional level. At the national level it is obligatory to report immediately only those outbreaks which, by law, are defined as being supra-communitary (considered to be of national interest) in order to facilitate their rapid control, where as the rest of the outbreaks are reported quarterly.
The results of the statistical and epidemiological analysis are disseminated in annual reports. In addition they are published in epidemiological bulletins (national, regional and other). The weekly national epidemiological bulletin.

Outbreak investigations as well as necessary control measures are carried out by the health authorities of the autonomous regions.
Training courses and guidelines on outbreak investigation addressed to doctors dealing with these problems have been set up in all regions.

History of the disease and/or infection in the country

Trichinellosis is a notifiable zoonosis, which causes several outbreaks per year in Spain. Most outbreaks are caused by Trichinella spiralis. Trichinella britovi has been associated with outbreaks due to the consumption of pig meat, boar meat.

Description of the positive cases detected during the reporting year

The majority of human trichinellosis is linked to the consumption of undercooked or raw pig or wild boar meat products.
In 2012, 2 outbreaks have been notified.

National evaluation of the recent situation, the trends and sources of infection

In the last years most Spanish outbreaks were due to consumption wild boar meat. Outbreaks from wild boar meat are increasingly frequent in certain regions of Spain and could be explained by ecological modifications in rural areas

Relevance as zoonotic disease

high

2.8.3 Trichinella in animals

Table Trichinella in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Units tested	Total units positive for Trichinella	T. spiralis	Trichinella spp., unspecified	T. britovi
Pigs - fattening pigs - not raised under controlled housing conditions - Slaughterhouse - Surveillance	F	Census	Official sampling	animal sample	Domestic	Animal	39128038	45	0	45	0
Solipeds, domestic - horses - Slaughterhouse - Surveillance	F	Census	Official sampling	animal sample	Unknown	Animal	51154	0	0	0	0
Wild boars - wild - Surveillance [1)]	F,L	Census	Official sampling	animal sample	Domestic	Animal	117552	257	11	234	12
Deer - wild - Game handling establishment - Surveillance	F	Census	Official sampling	animal sample	Unknown	Animal	145	0	0	0	0
Pigs - fattening pigs - not raised under controlled housing conditions - Slaughterhouse - Surveillance	F	Census	Official sampling	animal sample	Imported from outside EU	Animal	1858	0	0	0	0
Pigs - fattening pigs - not raised under controlled housing conditions - Slaughterhouse - Surveillance	F	Census	Official sampling	animal sample	Intra EU trade	Animal	192710	0	0	0	0
Pigs - fattening pigs - not raised under controlled housing conditions - Surveillance (Slaughter for private domestic consumption.)	F	Census	Official sampling	animal sample	Unknown	Animal	44438	10	0	10	0

Comments:

[1)] Hunted

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

Table Trichinella in animals

L: NATIONAL REFERENCE LABORATORY.

2.9 ECHINOCOCCOSIS

2.9.1 General evaluation of the national situation

A. Echinococcus spp. general evaluation

History of the disease and/or infection in the country

Hydatidosis is an endemic disease in Spain, mainly in regions with extensive systems of animal production.

Human hydatidosis has been a Mandatory Notifiable disease since 1982, year in which were comunicated around 2,000 cases.Royal Decree 2210/1995, laying down the National Epidemiologyc Surveillance Network, classify hydatidosis as an endemic disease at regional frame.

In 80´s many regions started to set up a control programme based in control of animal hydatidosis and in general people´s health education and focused in professionals related with animals and at school level. Similar control programmes have been developed in other Authonomous Communities.

The implementation of these control programmes got good results in the decrease of the incidence of the disease.
Routine post-mortem examination at slaughterhouse has being carried out according to european legislation in force (Hygiene Package).

National evaluation of the recent situation, the trends and sources of infection

Control programmes in endemic regions got good results in the dicrease of the disease at human level.
Main source of infection in Spain is cycle between sheep,dog and humans.
The epidemiological surveillance of human CE was initiated in the 1950s by the provincial health government authorities, through an active search of cases with individualized information. In 1982 CE was included in the Spanish list of compulsory notifiable diseases (CND), being recorded at national level until 1996.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

Higher incidence values of human cases are situated in regions with the highest census of sheep and goats.

Recent actions taken to control the zoonoses

Surveillance according to Directive 2003/99/EEC.
Control programmes in endemic regions.
Inclusion in National Epidemiology Surveillance Network according to Royal Decree 2210/1995.

The activities against this zoonoses are the Official Control in fresh meat according to european Legislation in force (Hygiene package).

2.9.2 Echinococcosis in humans

A. Echinococcus spp. in humans

Reporting system in place for the human cases

Human incidence were gathered from national epidemiological
surveillance information systems, Notifiable Disease Surveillance System (NDSS)

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system.
During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain.
In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.
All practising doctors are obliged to notify, both those in the public health service and in private practice, and both those practising outside and within hospitals. On occasions the appearance of cases and outbreaks is detected by other means (from the mass media, from citizens complants, etc.) and in these cases the information is checked and if confirmed it is incorporated into the system at the corresponding level.

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

In 1982, Notifiable Disease Surveillance System list was enhanced, and it was introduced the hydatidosis numerical notification. The health system collected the information from the medical consultations where the diagnosis was performed, the notification of suspect cases and incidents.

History of the disease and/or infection in the country

In Spain, E. granulosus is endemic in various regions, the trend curve showed a significant decrease from 1986 to 2011 with 55 confirmed cases reporting at National surveillance System.

The geographical distribution remains heterogeneous, with more cases in the peninsular plateau regions. The analysis of the demographic variables shows that, although the disease affects all age groups, the older age groups are the most affected. There are not significant sex differences.

Results of the investigation

In 2012 the number of confirmed cases reported to the NDSS was 96, showing an increase in relation to 2011. Nevertheless, the total number of cases has a decreasing trend.

National evaluation of the recent situation, the trends and sources of infection

There is a notable decrease in human echinococcosis. This decrease is most likely a result of a continued control programme, particularly in endemic regions with extensive animal production

Relevance as zoonotic disease

Cystic echinococcosis caused by the cestode Echinococcus granulosus is an endemic disease in Spain. Although specific control programmes initiated in the 1980s have led to marked reductions in CE infection rates in Spain, the disease still remains an important human and animal health problem in many regions of the country.

2.9.3 Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Region	Units tested	Total units positive for Echinococcus	E. granulosus	E. multilocularis
Cattle (bovine animals) - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	2211837	14872	14872	0
Sheep - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	10697407	61307	61307	0
Goats - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	988831	3129	3129	0
Pigs - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	39322606	3189	3189	0
Solipeds, domestic - horses - Slaughterhouse - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	51154	668	668	0
Deer - wild - Game handling establishment - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	140193	40	40	0
Pigs - Surveillance [1)]	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	13551	88	88	0
Wild boars - wild - Game handling establishment - Surveillance	F	Objective sampling	Official sampling	animal sample	Unknown	Animal	España	67734	149	149	0

	Echinococcus spp., unspecified
Cattle (bovine animals) - Slaughterhouse - Surveillance	0
Sheep - Slaughterhouse - Surveillance	0

Table Echinococcus in animals

	Echinococcus spp., unspecified
Goats - Slaughterhouse - Surveillance	0
Pigs - Slaughterhouse - Surveillance	0
Solipeds, domestic - horses - Slaughterhouse - Surveillance	0
Deer - wild - Game handling establishment - Surveillance	0
Pigs - Surveillance [1)]	0
Wild boars - wild - Game handling establishment - Surveillance	0

Comments:

[1)] Slaughter for private domestic consumption

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

2.10 TOXOPLASMOSIS

2.10.1 General evaluation of the national situation

A. Toxoplasmosis general evaluation

History of the disease and/or infection in the country

Toxoplasmosis in production animals has been associated classically to the production of miscarriage.The main source of infection is linked to the contamination of feed by cat faeces, although the use of dung in pasture natural fertilitation has to be considered as an important source of infection for adults.
For humans, there are two main sources of infection: contact with cats and comsumption of vegetables, water or animal products, mainly sheep and pig meat.
In 60's and 70's studies in some regions of Spain detected prevalences between 12-45% in sheep; between 11- 42% in pig;and between 14-36%in cattle.
More recent studies seem prevalences between 30-57% in sheep;between 41-62% in pig;and between 25 -43% in cattle.
In cats, the incidence founded by private clinics are close to 30%.

National evaluation of the recent situation, the trends and sources of infection

Main sources of infection for humans are cats and comsumption of meat insufficientment cooked.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

More studies need to be developed about incidence of congenital toxoplasmosis.

Recent actions taken to control the zoonoses

Surveillance according to Directive 2003/99/EC
Primary prevention of the disease with recommendations to prevent infection during pregnance in humans

2.10.2 Toxoplasmosis in humans

A. Toxoplasmosis in humans

Reporting system in place for the human cases

Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created.

Microbiological Information System

Only congenital cases are under surveillance

Case definition

According to Decision 2012/506/EU, only congenital toxoplasmosis

Diagnostic/analytical methods used

According to Decision 2012/506/EU, only congenital toxoplasmosis

Notification system in place

Microbiological Information System
The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc

Results of the investigation

After depuration of the Microbiological Information System database, only one congenital case was notified in 2011. In 2012 there were no cases reported.

Additional information

Only congenital cases

2.10.3 Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii	Toxoplasma spp., unspecified
Sheep - Farm - Clinical investigations	CCAA	Suspect sampling	Official sampling	animal sample > blood		ELISA	Animal	4	0		
Goats - Farm - Clinical investigations	CCAA	Suspect sampling	Official sampling	animal sample > blood		ELISA	Animal	2	0		
Dogs - Clinical investigations	CCAA	Suspect sampling	Not applicable	animal sample > blood		ELISA	Animal	539	295		295
Mountain goats - wild - Hunting - Surveillance	CCAA	Convenience sampling	Official sampling	animal sample > blood		ELISA	Animal	14	10		10

2.11 RABIES

2.11.1 General evaluation of the national situation

A. Rabies general evaluation

History of the disease and/or infection in the country

Paralytic and furious forms of rabies are described in the second book of the Hunting Agreement in the time of King Alfonso XI (1312-1350).The Royal Assembly of Health publication of 23 November 1786 adopted measures to avoid transmission of rabies controlling movement of dogs and cats.Royal Order of 1863 describes "measures of preservation that one has to follow in each case where the bite has been from a supposed rabid animal" and also set down the measures against rabies in animals, which were to be adopted by Local Authorities.At the beginning of the 20th century the Law of 18 December 1914 and Regulation of 4 June 1915 are approved to prevent the transmission of human rabies.During the 1940s the first statistics on animal rabies appeared (513 dog cases in 1944 and 24 human cases).On 12 May 1947 the Ministry of Agriculture issued a General Order establishing the measures to be taken against rabies and a second Order of 1948 established the norms for animal vaccination and control.During the 1950s the first mass dog vaccination campaigns took place.The Epizootics Law of 20 December 1952 established the general regulations of the anti-rabies programme.

Urban rabies has been the main epidemiologycal form in the history of the disease in Spain, with dogs as reservoir of the infection.

Spain is free of land rabies since 1966, with exception of Ceuta and Melilla, that have a regular notification of animal cases of rabies by their situation in North Africa, where rabies is endemic.

In peninsular territory an imported outbreak was reported in 1975 in the province of Malaga by introduction of dogs coming from North Africa. This outbreak ended in 1977 with 122 animals infected (dogs and cats, and 2 foxes) and one case of human rabies.

Since 1979 only sporadically cases by EBLV in bats (Eptesicus serotinus and Eptesicus isabellinus) have been reported in peninsular territory.

In June 2013, a positive dog illegally imported from North Africa was confirmed on rabies (RABV) in Spain mainland (Castilla-La Mancha region). According to the Action Plan in rabies, Spain declared the “Alert Level 1” for six months, with increased control measures in the risk area. This control measures included mandatory vaccination of dogs, cats and ferrets, surveillance of animal contacts, control of stray animals, control of cadavers of domestic and wild carnivores and movement restrictions.

National evaluation of the recent situation, the trends and sources of infection

Since 1978 Spanish mainland and islands remains free of rage in terrestrial mammals. Only a few cases of EBL have been reported in bats.

These data show that the main source and risk for the apparition of cases of rabies in Spain is the importation of animals with the infection from Morocco and other countries of North Africa.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

Since 1975 no human cases has been reported in peninsular territory and islands.

Recent actions taken to control the zoonoses

Compulsory surveillance of the disease according to article 4 of Directive 2003/99/EEC,came into force by Royal Decree 1940/2004.

Compulsory vaccination of dogs in 12 autonomous comunities, Ceuta and Melilla. Voluntary in the rest.

Studies including active surveillance of LB-1 in bats.
Information to the citizens about no manipulation of bats.
An Action Plan has been approved, and includes risk evaluation, surveillance, mechanisms to control and a response protocol with four alert levels.

2.11.2 Rabies in humans

A. Rabies in humans

Reporting system in place for the human cases

Notifiable Disease Surveillance System (NDSS)

Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created

Royal Decree 1940/2004, september 27, about zoonoses disease and zoonoses agents surveillance

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Notifiable Disease Surveillance System (NDSS)

On December 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system.

During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain. In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.

All practising doctors are obliged to notify, both those in the public health service and in private practice, and both those practising outside and within hospitals.
This notification has been compulsory by law for all doctors since 1901.

History of the disease and/or infection in the country

Spain remained free of human cases from 1975

National evaluation of the recent situation, the trends and sources of infection

Spain is free of rabies.

In 1987 bat rabies was reported. The description of the illness amongst bats lead to an immediate reaction by the health authorities, who had already brought together a group of experts in 1987 to work out recommendations and establish lines of research.

The Ministry of Health and Consume Affairs backed the study about the distribution of EBL1 in the bat population, as well as studies of aetiology and the distribution of bat populations in different regions of

Spain. They established serum prevalence towards EBL1 in different species such as Myotis myotis, Miniopterus schreibersii, Tadarida teniotis and Rhinolophus ferrumequinum, and several origins

The studies carried out in the Instituto de Salud Carlos III of the Ministry of Health, in collaboration with the Biological station in Doñana, allow the perfecting of highly sensitive diagnostic techniques, such polymerase chain reaction (PCR), to understand the distribution, natural history and pathogenesis of the disease in insectivorous bats.

The main risk for the appearance of human cases of rabies in Spain is the importation of cases bitten by rabid dogs from Morocco and other countries of North Africa, as well as those bitten by an infected bat in the Peninsula.

Relevance as zoonotic disease

High

2.11.3 Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Sampling strategy

Sampling strategy is targeted at 4 levels:
1. Apparently healthy terrestrial mammals that injure a person and die into the quarantine (kept under observation) period of 14 days or if the animal is suspected to be rabid (euthanasia).Samples are taken by competent authority. Passive surveillance
2.Dogs and cats imported from third countries not included in part 1 and 2 of Annex II of Council Regulation(EC) No 577/2013 need a neutralising antibody titration at least equal to 0,5 IU/ml carried out in an approved laboratory to enter into Spain according to Council Regulation (EC) No 576/2013
3.Dogs and cats that are going to travel to United Kingdom, Ireland, Sweeden, Norwey and Malta.Samples are taken by private clinics and analisys performed by an approved laboratory
4. Studies including active surveillance of LB in bats

Frequency of the sampling

Indeterminated

Type of specimen taken

Brain, Blood, Saliva

Methods of sampling (description of sampling techniques)

Brain of dead or sacrified animals have to be sent to National Reference Laboratory following a protocol of sending.The sample has to be taken with sterility, be submerged in salinum serum and glicerine in 50% solution and envoided refrigerated quickly.
Blood and serum(0,5 ml minimun) have to be sent following a protocol, by a quick transport service refrigerated or frozen.

Case definition

According to Decision No. 2119/98/EC of the European Parliament and of the Council, Commission Decision 2002/253/EC and Commission Decision 2002/543/EC

Diagnostic/analytical methods used

Fluorescent Antibody Test (FAT), Polymerase Chain Reaction followed by DNA sequencing genomic areas, ELISA

Vaccination policy

Compulsory vaccination of dogs in 12 regions, Ceuta and Melilla.
Voluntary vaccination of dogs in 5 regions.

Other preventive measures than vaccination in place

Control of animals coming from third countries not included in part 1 and 2 of Annex II of Council Regulation(EC) No 577/2013
Identification and registration of dogs.
Pick up of stray dogs by council town authorities.

Control program/mechanisms

The control program/strategies in place

Several regional prevention programmes.
Control of imports and exports according to Council Regulation(EC) No 576/2013 and Regulation(EC) No 577/2013

Recent actions taken to control the zoonoses

Imports of third countries not included in part 1 and 2 of Annex II of Council Regulation(EC) No 577/2013
An Action Plan has been approved in 2010, and includes risk evaluation, surveillance, mechanisms to control and a response protocol with four alert levels.

Measures in case of the positive findings or single cases

Mandatory Notifiable disease Royal Decree 2210/1995, December 25th, by Epidemiological Surveillance National Net is created.

Oficcial Notification of the disease

Epidemiologic survey

Cases in Spain (Melilla) are imported from third countries

Notification system in place

Since 1952, at least, by Epizootic Law.
At the moment by Animal Health Law 8/2003.

Results of the investigation

In June 2013, a positive dog illegally imported from North Africa was confirmed on rabies (RABV) in Spain mainland (Castilla-La Mancha region). According to the Action Plan in rabies, Spain declared the “Alert Level 1” for six months, with increased control measures in the risk area. This control measures included mandatory vaccination of dogs, cats and ferrets, surveillance of animal contacts, control of stray animals, control of cadavers of domestic and wild carnivores and movement restrictions.

Investigations of the human contacts with positive cases

All the people bitten by a suspected animal are investigated following the protocol " Rules of procedures in case of animal aggressions", published in 2012. According to the epidemiological situation and the type of contact with the suspected animal, the decision about the application of complete treatment (vaccine and Ig) is taken.

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

High

Additional information

In 2013 was updated the protocol " Rules of procedures in case of animal aggressions", that includes risk assessment, actions to be taken after a risk exposition and treatment after a risk exposition and the "Action Plan for rabies in animals" that includes risk evaluation, surveillance, mechanisms to control and a response protocol with four alert levels.

Table Rabies in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Rabies virus (RABV)	EBLV-1
Dogs - stray dogs [1)]	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Domestic	Animal	España	54	5	5	
Cats - stray cats [2)]	Ministry of Health, Social Services and Equality (MSSSI	Suspect sampling	Official sampling	animal sample > brain	Domestic	Animal	España	41	0		
Bats - wild - Monitoring [3)]	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	88	1		1
Foxes - wild - Monitoring [4)]	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	14	0	0	
Raccoons - wild - Monitoring [5)]	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	1	0		
Wolves - wild - Monitoring [6)]											
Dogs - Monitoring - passive [7)]	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Imported from outside EU	Animal	España	1	1	1	

Table Rabies in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Region	Units tested	Total units positive for Lyssavirus (rabies)	Rabies virus (RABV)	EBLV-1
8) Ferrets - wild - Unknown - Monitoring - passive	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	3	0		
9) Monkeys - Monitoring - passive	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	1	0		
10) Other carnivores - wild - Monitoring - passive	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	5	0		
11) Rodents - wild - Monitoring - passive	Ministry of Health, Social Services and Equality (MSSSI)	Suspect sampling	Official sampling	animal sample > brain	Unknown	Animal	España	20	0		

	EBLV-2	Lyssavirus (unspecified virus)
1) Dogs - stray dogs		
2) Cats - stray cats		
3) Bats - wild - Monitoring		
4) Foxes - wild - Monitoring		
5) Raccoons - wild - Monitoring		

Table Rabies in animals

	EBLV-2	Lyssavirus (unspecified virus)
Wolves - wild - Monitoring [6)]		
Dogs - Monitoring - passive [7)]		
Ferrets - wild - Unknown - Monitoring - passive [8)]		
Monkeys - Monitoring - passive [9)]		
Other carnivores - wild - Monitoring - passive [10)]		
Rodents - wild - Monitoring - passive [11)]		

Comments:

[1)] The 5 positive dogs were from Melilla. Passive surveillance

[2)] Passive surveillance

[3)] Passive surveillance

[4)] The positive fox was from Melilla. Passive surveillance

[5)] Passive surveillance

[6)] Passive surveillance

[7)] One illegaly imported dog in Melilla and one illegally imported dog in Castilla La Mancha (both imported from North Africa). Passive surveillance

[8)] Passive surveillance

[9)] Passive surveillance

[10)] Passive surveillance

[11)] Passive surveillance

Table Rabies in animals

Footnote:

There were 5 dogs positive declared in Melilla (spanish city in North Africa), one of them illegally imported from Morocco
There was 1 dog positive declared in Spain Mainland (Castilla La Mancha region)illegally imported from North Africa. Spain mainland and islands remains free of rabies

2.12 STAPHYLOCOCCUS INFECTION

2.12.1 General evaluation of the national situation

2.12.2 Staphylococcus in foodstuffs

Table Staphylococcus in Food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcus	S. aureus, meticillin resistant (MRSA)	S. aureus, meticillin resistant (MRSA) - spa -type t011
Meat from bovine animals - fresh	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	1	0	0	0
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	25	0	0	0
Meat from pig - fresh	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	60	5	3	1
Meat from pig - meat products	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	71	6	0	0
Meat from pig - minced meat	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	8	0	0	0
Meat from turkey - meat preparation - intended to be eaten cooked	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	77	3	3	0
Meat from turkey - meat products	F	Objective sampling	Official sampling	food sample > meat	Unknown	Single	25 g	6	0	0	0
Milk, cows' - raw milk - intended for direct human consumption	F	Objective sampling	Official sampling	food sample > milk	Unknown	Single	25 g	5	0	0	0

Table Staphylococcus in Food

	S. aureus, meticillin resistant (MRSA) - spa -type t108	S. aureus, meticillin resistant (MRSA) - spa -type t034	S. aureus, meticillin resistant (MRSA) - MRSA, unspecified	Staphylococcus spp., unspecified
Meat from bovine animals - fresh	0	0	0	0
Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked	0	0	0	0
Meat from pig - fresh	0	0	2	2
Meat from pig - meat products	0	0	0	6
Meat from pig - minced meat	0	0	0	0
Meat from turkey - meat preparation - intended to be eaten cooked	0	0	3	0
Meat from turkey - meat products	0	0	0	0
Milk, cows' - raw milk - intended for direct human consumption	0	0	0	0

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

2.13 Q-FEVER

2.13.1 General evaluation of the national situation

A. Coxiella burnetii (Q-fever) general evaluation

History of the disease and/or infection in the country

Q fever is a zoonosis with widely extended in the world. In Spain the first cases were documented in 1949.

National evaluation of the recent situation, the trends and sources of infection

Q fever cases and outbreak in Spain are reported to Epidemiological Notifiable Disease Surveillance System (outbreak) (NDDS) and Microbiological Information System (SIM)

2.13.2 Q-fever in humans

A. C. burnetii in humans

Reporting system in place for the human cases

In December of 1995 the National Network of Epidemiological Surveillance was created by law. This law and its development produced changes in the surveillance system.
During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain. In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.

- Microbiological Information System
The Microbiological Information System has been based since 1989 on voluntary weekly reporting by clinical microbiology laboratories (principally hospital laboratories). Currently, in order to improve the notification, this procedure is becoming compulsory for a designated group of representative laboratories. The information in these reports is based on individual cases and includes the following variables: agent, time, place, age, sex, etc.

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

Microbiological Information System
Outbreak reporting system

History of the disease and/or infection in the country

Q fever is a zoonosis with widely extended in the world. In Spain the first cases were documented in 1949.

The most common animal reservoirs are livestock and the main form of infection is by inhalation of contaminated aerosols.

National evaluation of the recent situation, the trends and sources of infection

Most of cases and outbreaks are related to care of sheep, other form of an occupational nature such as abattoirs were presents.

In 2012, 58 cases of Q fever have been reported to the Microbiological Information System.

Relevance as zoonotic disease

high

2.13.3 Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Analytical Method	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii	No of clinically affected herds
Cattle (bovine animals) - Farm - Clinical investigations	CCAA	Suspect sampling	Official sampling	animal sample > blood		ELISA	Animal	14	0		
Goats - Farm - Monitoring - passive	CCAA	Suspect sampling	Official sampling	animal sample > milk	Domestic	PCR	Herd	3	3	3	3
Sheep - Farm - Monitoring - active	CCAA	Objective sampling	Official sampling	animal sample > blood	Domestic	ELISA	Animal	2735	0		

2.14 WEST NILE VIRUS INFECTIONS

2.14.1 General evaluation of the national situation

2.14.2 West Nile Virus Infections in humans

A. West Nile Virus in Humans

Reporting system in place for the human cases

WNVD is a compulsory reporting disease in humans.
The source of information is the National Disease Surveillance System, through the National Reference Laboratory

Case definition

According to Decision 2012/506/EU

Diagnostic/analytical methods used

According to Decision 2012/506/EU

Notification system in place

National Disease Surveillance System through the National Reference Laboratory

History of the disease and/or infection in the country

The fisrt human West Nile case in Spain was reported in 2004. In 2010 there were two human cases in Spain, related to an outbreak in horses.
There is an active and passive surveillance system in birds and horses in risk areas, as well as human active surveillance (meningo-encephalitis cases) in those areas, specially on the period of vector activity (March-November)

Results of the investigation

Since 2010, no more human cases have been detected.

National evaluation of the recent situation, the trends and sources of infection

The possibility of WNVD human cases in Spain is low, and limited to risk areas.

2.14.3 West Nile Virus in animals

A. West Nile Virus in Animals

Monitoring system

Sampling strategy

Passive and active surveillance is undertaken on wild birds, as well as vector surveillance and active and passive surveillance in horses

Frequency of the sampling

Passive surveillance is conducted all along the year. Active surveillance frequency is risk based determined and always on the period of vector activity (March-November)

Type of specimen taken

blood serum, cefalorraquidean liquid, organs

Methods of sampling (description of sampling techniques)

Active surveillance on wild birds:
•Virus isolation on animals dead during their stay on a recovery center
•Serological sampling on zoological parks to detect seroconversion
•Capture-recapture based surveillance on wetlands.

Passive surveillance on wild birds is conducted on birds found dead apparently not due to other causes. On this case, kidney, brain and heart are sampled.

Passive surveillance on horses located in risk areas. Samples of serum and cefalorraquidean liquid are taken for antibody and direct detection respectively. On those animals with clinical symptomatology brain, kidney and heart samples will be taken.

Active surveillance on horses When results of the surveillance in wild birds determine virus circulation on the area. Samples of serum are taken for antibody detection.

Vector monitoring of presence with specific traps and direct detection of the virus.

Case definition

Any horse showing nervous signs compatible with WNV with a IgM positive results by ELISA or any RT-PCR positive results in samples of brain, heart and kidney and cefalorraquidean liquid.

Diagnostic/analytical methods used

Direct detection: RT-PCR method.

Serological test:
ELISA IgM test and ELISA IgG test. The sero-neutralisation allows discriminating among infections by different flavivirus and is used as confirmation technique.

Vaccination policy

Vaccination is recommended as a measure of prevention. In case of a huge number of affected animals, vaccination is included on contingency plan as a possible measure of control.

Other preventive measures than vaccination in place

.In case of suspicion, active sampling will be added .Clinical surveillance is undertaken on horses mainly in those farms located in wetlands and might be up to 20 km distance to the wetland. Strengthening of wild birds surveillance. Vector control measures and use of repellents.

Control program/mechanisms

The control program/strategies in place

Surveillance actions will be taken according to the level of risk.
Level 1 Wild birds and entomological surveillance
Level 2 When virus circulation has been proved on birds and mosquitoes, active horses surveillance will be added.Results and a summary about the execution of the plan are sent every year, to the Ministry of Agriculture, Food and Environment Affaires from the different Autonomous Communities carrying out this plan.

Recent actions taken to control the zoonoses

When virus circulation is detected either in horses or birds, animal health authorities will communicate those results to public health authorities, so that measures to prevent the transmission to humans can be taken.

Suggestions to the European Union for the actions to be taken

Public education to reduce the risk of transmission: prevent exposure to mosquitoes during the hours of activity, repellent use and mosquito nets protection on houses. Information through a protocol distributed among primary care doctors and health workers in risk areas.

Measures in case of the positive findings or single cases

Surveillance increased in farms with a confirmed case. Epidemiological inquiry, census of horses and inspection of equine farms nearby. Surveillance in wild birds is strengthen.

Notification system in place

Based on the Council Directive 82/894/EEC on the notification of animal diseases within the Community and subsequent amendments transposed in Spain by Real Decreto 617/2007, of May 16, which is establishing the list of diseases notifiable animal and gives the rules for notification.
Outbreaks are notified to through national database, RASVE and directly transmitted to ADNS. WAHID notification is done when necessary.

Results of the investigation

The results are reported in the table “West Nile in Animals”.

National evaluation of the recent situation, the trends and sources of infection

The future scenario is the maintenance of WNV circulation in the area where it has been notified in previous years, with a possible extension to other areas where ecological conditions are favorable.

Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)

It’s not relevant in foodstuffs.In terms of human morbidity and mortality, WNV infections are frequently asymptomatic and probability of infection is considered very low. Horses are not considered a source of infection for humans.

Table West Nile Virus in Animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Vaccination status	Analytical Method	Sampling unit	Region	Units tested	Total units positive for West Nile Virus
Solipeds, domestic - horses - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	Andalucía	124	0
Solipeds, domestic - horses - Farm - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	Cataluña	68	0
Birds - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic		ELISA	Animal	Galicia	14	0
Birds - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic		ELISA	Animal	Andalucía	48	0
Birds - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic		ELISA	Animal	España	62	0
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			ELISA	Animal	Andalucía	373	0
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			ELISA	Animal	Cataluña	122	0
Birds - wild - Natural habitat - Monitoring - passive [1)]	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			PCR	Animal	España	1172	3
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			ELISA	Animal	Castilla y León	557	0
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood	Domestic		ELISA	Animal	Galicia	120	0
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			PCR	Animal	Andalucía	3	3

Table West Nile Virus in Animals

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Vaccination status	Analytical Method	Sampling unit	Region	Units tested	Total units positive for West Nile Virus
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			Seroneutralisation test	Animal	Galicia	1	0
Birds - wild - Natural habitat - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood			Seroneutralisation test	Animal	Andalucía	2	0
Solipeds, domestic - horses - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	Castilla y León	140	0
Solipeds, domestic - horses - Farm - Monitoring - active	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	España	264	0
Solipeds, domestic - horses - Farm - Monitoring - passive	MAGRAMA	Selective sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	España	157	35
Solipeds, domestic - horses - Farm - Monitoring - passive	MAGRAMA	Suspect sampling	Official sampling	animal sample > blood	Domestic	Unknown	ELISA	Animal	Andalucía	89	35

Comments:

[1)] Other tests used as screening/confirmatory: ELISA, seroneutralisation test

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1 ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1 General evaluation of the national situation

A. Escherichia coli general evaluation

History of the disease and/or infection in the country

E. coli cause many infections in humans, with intestinal and extra-intestinal forms. In production animals E. coli diseases are very frequent, mainly in newborns or animals few days old of cattle, pork and sheep.Problems are often too in farms of poultry and rabbits.

Several cases and outbreaks of diarrhea for Enteropatogenic E. coli have been detected since 60´s, but these focus have reduced importantly in last decades.Serotypes in rabbits or rumiants are different than human ones.In Spain, the main serotype in rabbits is O103:H2.

E. coli Enterotoxicogenic are more frecuent associated with focus of gastroenteritis in humans, by consume of water and animal products.But predominant human serotypes in Spain(O25:H-;O153:H45;O169:H41) are different than the ones that causes diarrohea in animals. In piglets predominat serotypes are O138:K81:H14;O141:K85ab:H-;O149:K91:H10;O157:H-.

National evaluation of the recent situation, the trends and sources of infection

In production animals diseases by E. coli are very frequent. Although E. coli strains that cause infections in humans and animals can share many virulence factors, they often show different serotypes.Therefore, E.coli strains patogenic for animals are infrequent to produce infections in humans, but it is proved that animals can be a reservoir of Enteropathogenic E. coli for humans.

Environment and water can also be a source of infecction.

Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)

It is very difficult to establish the relevance of findings as sources of infection, because E. coli is a very ubiquitous agent and strains patogenic for animals are infrequent to produce infections in humans.

3.1.2 Antimicrobial resistance in Escherichia coli, non-pathogenic

A. Antimicrobial resistance of E.coli in animal

Sampling strategy used in monitoring

Frequency of the sampling

Samples have been taken ramdomly (day of sampling each month)in 15 (broilers),18 (young bovines) or 19 (fattening pigs) slaughterhouses (distribution of the samples according to the capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country. Sampling from April to October

Type of specimen taken

Faeces

Methods of sampling (description of sampling techniques)

See text forms on AMR in Campylobacter in cattle, fattening pigs and poultry

Procedures for the selection of isolates for antimicrobial testing

According EFSA technical specifications.

Methods used for collecting data

According EFSA technical specifications.

Laboratory methodology used for identification of the microbial isolates

PCR

Laboratory used for detection for resistance

Antimicrobials included in monitoring

EFSA technical specifications

Results of the investigation

Sent trough DCF

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	4	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	4	0
Aminoglycosides - Kanamycin	4	0
Aminoglycosides - Streptomycin	4	0
Amphenicols - Chloramphenicol	4	0
Amphenicols - Florfenicol	4	0
Cephalosporins - 3rd generation cephalosporins	4	0
Fluoroquinolones - Ciprofloxacin	4	1
Penicillins - Ampicillin	4	0
Quinolones - Nalidixic acid	4	1
Sulfonamides	4	1
Tetracyclines - Tetracycline	4	1
Trimethoprim	4	0
Fully sensitive	4	3
Resistant to 1 antimicrobial	4	0
Resistant to 2 antimicrobials	4	0
Resistant to 3 antimicrobials	4	0
Resistant to 4 antimicrobials	4	0
Resistant to >4 antimicrobials	4	1
Cephalosporins - Cefotaxime	4	0

Table Antimicrobial susceptibility testing of E. coli in Meat from bovine animals

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	9	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	9	0
Aminoglycosides - Kanamycin	9	0
Aminoglycosides - Streptomycin	9	6
Amphenicols - Chloramphenicol	9	3
Amphenicols - Florfenicol	9	1
Cephalosporins - 3rd generation cephalosporins	9	0
Fluoroquinolones - Ciprofloxacin	9	6
Penicillins - Ampicillin	9	3
Quinolones - Nalidixic acid	9	1
Sulfonamides	9	6
Tetracyclines - Tetracycline	9	5
Trimethoprim	9	3
Fully sensitive	9	1
Resistant to 1 antimicrobial	9	2
Resistant to 2 antimicrobials	9	1
Resistant to 3 antimicrobials	9	0
Resistant to 4 antimicrobials	9	0
Resistant to >4 antimicrobials	9	5
Cephalosporins - Cefotaxime	8	0

Table Antimicrobial susceptibility testing of E. coli in Meat from pig

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	9	
Antimicrobials:	N	n
Trimethoprim + Sulfonamides	1	0

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of E. coli in Meat from broilers (Gallus gallus)

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	16	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	16	2
Aminoglycosides - Kanamycin	16	3
Aminoglycosides - Streptomycin	16	4
Amphenicols - Chloramphenicol	16	3
Amphenicols - Florfenicol	16	0
Cephalosporins - 3rd generation cephalosporins	16	3
Fluoroquinolones - Ciprofloxacin	16	10
Quinolones - Nalidixic acid	16	9
Sulfonamides	16	9
Tetracyclines - Tetracycline	16	12
Trimethoprim	16	6
Fully sensitive	16	2
Resistant to 1 antimicrobial	16	2
Resistant to 2 antimicrobials	16	1
Resistant to 3 antimicrobials	16	1
Resistant to 4 antimicrobials	16	9
Cephalosporins - Cefotaxime	15	3
Penicillins - Amoxicillin / Clavulanic acid	16	10
Trimethoprim + Sulfonamides	1	1

Table Antimicrobial susceptibility testing of E. coli in Meat from broilers (Gallus gallus)

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Fishery products, unspecified

Escherichia coli, non-pathogenic	E.coli, non-pathogenic, unspecified	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	68	
Antimicrobials:	N	n
Aminoglycosides - Gentamicin	68	2
Aminoglycosides - Kanamycin	68	5
Aminoglycosides - Streptomycin	68	11
Amphenicols - Chloramphenicol	68	5
Amphenicols - Florfenicol	68	3
Cephalosporins - 3rd generation cephalosporins	68	4
Cephalosporins - Cefotaxime	68	5
Fluoroquinolones - Ciprofloxacin	68	14
Penicillins - Ampicillin	68	21
Quinolones - Nalidixic acid	68	11
Sulfonamides	68	11
Tetracyclines - Tetracycline	68	21
Trimethoprim	68	10
Fully sensitive	68	38
Resistant to 1 antimicrobial	68	6
Resistant to 2 antimicrobials	68	6
Resistant to 3 antimicrobials	68	5
Resistant to 4 antimicrobials	68	1
Resistant to >4 antimicrobials	68	12

Table Antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Fishery products, unspecified

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in All foodstuffs - quantitative data [Diffusion method]

Zone diameter (mm), number of isolates with a zone of inhibition equal to

E.coli, non-pathogenic, unspecified	All foodstuffs																									
Isolates out of a monitoring program (yes/no)	yes																									
Number of isolates available in the laboratory	42																									
Antimicrobials:	Cut-off value	N	n	<=4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Aminoglycosides - Kanamycin	13	42	8		8											2	4	6	8	4	5	3	2			
Cephalosporins - Cefotaxime	14	3	0																		2	1				
Aminoglycosides - Amikacin	17	3	0														2	1								
Carbapenems - Imipenem	23	3	0																						2	1
Penicillins - Amoxicillin / Clavulanic acid	16	3	0																2	1						

E.coli, non-pathogenic, unspecified	All foodstuffs								
Isolates out of a monitoring program (yes/no)	yes								
Number of isolates available in the laboratory	42								
Antimicrobials:	28	29	30	31	32	33	34	35	>=36
Aminoglycosides - Kanamycin									
Cephalosporins - Cefotaxime									
Aminoglycosides - Amikacin									
Carbapenems - Imipenem									
Penicillins - Amoxicillin / Clavulanic acid									

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in All foodstuffs - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E.coli, non-pathogenic, unspecified	All foodstuffs																								
Isolates out of a monitoring program (yes/no)	yes																								
Number of isolates available in the laboratory	107																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	15	15															5	3	5	1		1			
Aminoglycosides - Kanamycin	8	8	8																	7		1				
Aminoglycosides - Streptomycin	16	83	26												4	36	12	5	2	2	3	3	6	10		
Amphenicols - Chloramphenicol	16	89	23												4	24	36	2	3	3	4	13				
Cephalosporins - Cefotaxime	25	74	0						60		7		3	1		1	2									
Fluoroquinolones - Ciprofloxacin	32	74	0			18	23		3		9	6		3		4	2	6								
Penicillins - Ampicillin	8	102	52											2	20	25	3			25	2	25				
Quinolones - Nalidixic acid	16	84	25													58	1			6	14	5				
Sulfonamides	256	89	36													1	25	13	10	4			10	26		
Tetracyclines - Tetracycline	8	107	59											21	23	2	2	1	4	16	22	16				
Trimethoprim	2	75	15										57	2	1				1	14						
Trimethoprim + Sulfonamides	1	26	26																26							

E.coli, non-pathogenic, unspecified	All foodstuffs	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	107	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin		

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in All foodstuffs - quantitative data [Dilution method]

E.coli, non-pathogenic, unspecified	All foodstuffs	
Isolates out of a monitoring program (yes/no)	yes	
Number of isolates available in the laboratory	107	
Antimicrobials:	lowest	highest
Aminoglycosides - Kanamycin		
Aminoglycosides - Streptomycin		
Amphenicols - Chloramphenicol		
Cephalosporins - Cefotaxime		
Fluoroquinolones - Ciprofloxacin		
Penicillins - Ampicillin		
Quinolones - Nalidixic acid		
Sulfonamides		
Tetracyclines - Tetracycline		
Trimethoprim		
Trimethoprim + Sulfonamides		

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	170																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	170	52									13	57	44	4		2	6	44							
Aminoglycosides - Kanamycin	8	170	32													113	25	12	3	1	16					
Aminoglycosides - Streptomycin	16	170	107												2	4	42	15	15	12	80					
Amphenicols - Chloramphenicol	16	170	26												5	77	60	2	1	25						
Amphenicols - Florfenicol	16	170	2												9	90	62	7	1	1						
Cephalosporins - Cefotaxime	0.25	170	27							96	42	5	1		1	25										
Fluoroquinolones - Ciprofloxacin	0.064	170	142				17		11		2	19	21	19	19	3	59									
Penicillins - Ampicillin	8	170	119											5	32	13	1		119							
Quinolones - Nalidixic acid	16	170	138													30	2			138						
Tetracyclines - Tetracycline	8	170	109											48	13				2	107						
Trimethoprim	2	170	58										111	1					58							
Cephalosporins - Ceftazidime	0.5	170	26									128	16	6	2	1	5	12								
Polymyxins - Colistin	2	170	0												170											
Sulfonamides - Sulfamethoxazole	64	170	86														33	29	18	4				86		

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E.coli, non-pathogenic, unspecified	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	170	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Pigs - fattening pigs - Slaughterhouse - Unknown - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E.coli, non-pathogenic, unspecified	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	170																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	170	7									34	75	47	7		1	3	3							
Aminoglycosides - Kanamycin	8	170	23													140	7		1		22					
Aminoglycosides - Streptomycin	16	170	132												5	3	16	14	37	38	57					
Amphenicols - Chloramphenicol	16	170	69												6	71	21	3	24	45						
Amphenicols - Florfenicol	16	170	5												6	99	46	14		5						
Cephalosporins - Cefotaxime	0.25	170	1							126	40	3			1											
Fluoroquinolones - Ciprofloxacin	0.064	170	56			5	65		40	4	5	26	17	2	1		5										
Penicillins - Ampicillin	8	170	130											7	22	11			130							
Quinolones - Nalidixic acid	16	170	33													128	9		2	31						
Tetracyclines - Tetracycline	8	170	152											13	3	1	1	1	8	143						
Trimethoprim	2	170	124										43	2	1				124							
Cephalosporins - Ceftazidime	0.5	170	1									155	14			1										
Polymyxins - Colistin	2	170	1												169	1										
Sulfonamides - Sulfamethoxazole	64	170	129														22	14	4	1				129		

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Pigs - fattening pigs - Slaughterhouse - Unknown - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E.coli, non-pathogenic, unspecified	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	170	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Unknown - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E.coli, non-pathogenic, unspecified	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	170																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Gentamicin	2	170	6									14	99	49	2		1	1	4							
Aminoglycosides - Kanamycin	8	170	6													161	3			2	4					
Aminoglycosides - Streptomycin	16	170	57												1	22	75	15	6	18	33					
Amphenicols - Chloramphenicol	16	170	23												5	97	44	1	1	22						
Amphenicols - Florfenicol	16	170	16												6	105	41	2		16						
Cephalosporins - Cefotaxime	0.25	170	0							144	26															
Fluoroquinolones - Ciprofloxacin	0.064	170	5			11	100		53	1		1	2				2									
Penicillins - Ampicillin	8	170	28											22	65	55			28							
Quinolones - Nalidixic acid	16	170	5													165				5						
Tetracyclines - Tetracycline	8	170	81											79	9		1	4	6	71						
Trimethoprim	2	170	31										139						31							
Cephalosporins - Ceftazidime	0.5	170	0									166	4													
Polymyxins - Colistin	2	170	0												170											
Sulfonamides - Sulfamethoxazole	64	170	63														41	36	24	6	1			62		

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Unknown - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E.coli, non-pathogenic, unspecified	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	170	
Antimicrobials:	lowest	highest
Aminoglycosides - Gentamicin	0.25	32
Aminoglycosides - Kanamycin	4	128
Aminoglycosides - Streptomycin	2	128
Amphenicols - Chloramphenicol	2	64
Amphenicols - Florfenicol	2	64
Cephalosporins - Cefotaxime	0.06	4
Fluoroquinolones - Ciprofloxacin	0.008	8
Penicillins - Ampicillin	0.5	32
Quinolones - Nalidixic acid	4	64
Tetracyclines - Tetracycline	1	64
Trimethoprim	0.5	32
Cephalosporins - Ceftazidime	0.25	16
Polymyxins - Colistin	2	4
Sulfonamides - Sulfamethoxazole	8	1024

Table Antimicrobial susceptibility testing of E.coli, non-pathogenic, unspecified in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Unknown - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		16	
Amphenicols	Chloramphenicol		16	
Cephalosporins	Cefotaxime		0.25	
	Ceftazidime		0.5	
Fluoroquinolones	Ciprofloxacin		0.064	
Penicillins	Ampicillin		8	
Quinolones	Nalidixic acid		16	
Sulfonamides	Sulfonamides		256	
	Sulfamethoxazole		64	
Tetracyclines	Tetracycline		8	
Trimethoprim	Trimethoprim		2	

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Animals

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		2	
	Streptomycin		16	
Amphenicols	Chloramphenicol		16	
Cephalosporins	Cefotaxime		0.25	
	Ceftazidime		0.5	
Fluoroquinolones	Ciprofloxacin		0.064	
Penicillins	Ampicillin		8	
Quinolones	Nalidixic acid		16	
Sulfonamides	Sulfonamides		256	
	Sulfamethoxazole		64	
Tetracyclines	Tetracycline		8	
Trimethoprim	Trimethoprim		2	

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Feed

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Food

Test Method Used	Standard methods used for testing
Disc diffusion Agar dilution	

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin	EFSA	2	12
	Kanamycin		8	13
	Streptomycin	EFSA	16	11
	Amikacin			17
Amphenicols	Chloramphenicol	EFSA	16	12
	Florfenicol		16	12
Cephalosporins	3rd generation cephalosporins		1	14
	Cefotaxime	NON-EFSA	25	14
	Ceftazidime	EFSA	0.5	
	Cefepime		5	
Fluoroquinolones	Ciprofloxacin	NON-EFSA	32	15
Penicillins	Ampicillin	EFSA	8	13
	Amoxicillin / Clavulanic acid			16

Table Cut-off values used for antimicrobial susceptibility testing of Escherichia coli, non-pathogenic in Food

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Quinolones	Nalidixic acid	EFSA	16	13
Sulfonamides	Sulfonamides	EFSA	256	12
	Sulfamethoxazole	EFSA	64	
Tetracyclines	Tetracycline	EFSA	8	14
Trimethoprim	Trimethoprim	EFSA	2	10
Carbapenems	Imipenem			23
Trimethoprim + Sulfonamides	Trimethoprim + Sulfonamides		1	10

Footnote:

Source of information: Public Health Services of the Autonomous Communities.

3.2 ENTEROCOCCUS, NON-PATHOGENIC

3.2.1 General evaluation of the national situation

3.2.2 Antimicrobial resistance in Enterococcus, non-pathogenic isolates

A. Antimicrobial resistance of E. faecium in animal

Sampling strategy used in monitoring

Frequency of the sampling

Samples have been taken ramdomly (day of sampling each month)in 15 (broilers),18 (young bovines) or 19 (fattening pigs) slaughterhouses (distribution of the samples according to the capacity of sacrifice of each slaughterhouse) placed in different regions of Spain and representative of the total volume of sacrifice of the country. Sampling from April to October

Type of specimen taken

Faeces

Methods of sampling (description of sampling techniques)

See text forms on AMR in Campylobacter in cattle, fattening pigs and poultry

Procedures for the selection of isolates for antimicrobial testing

According EFSA technical specifications.

Methods used for collecting data

According EFSA technical specifications.

Laboratory methodology used for identification of the microbial isolates

PCR

Laboratory used for detection for resistance

Antimicrobials included in monitoring

According EFSA technical specifications.

Cut-off values used in testing

According EFSA technical specifications.

Results of the investigation

Sent trough DCF

Table Antimicrobial susceptibility testing of E. faecium in Pigs - fattening pigs - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecium	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	76																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Amphenicols - Chloramphenicol	32	76	0												3	36	34	1	2							
Fluoroquinolones - Ciprofloxacin	4	76	0								1	5	16	26	12	16										
Tetracyclines - Tetracycline	4	76	60											16					60							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	76	16									1	1	15	19	24	16									
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	76	0									29	44	1	2											
Glycylcyclines - Tigecycline	0.25	76	0				1		12	24	31	8														
Lincosamides - Lincomycin	8	76	0											2		1	73									
Macrolides - Erythromycin	4	76	54									5	2	1	1	13	54									
Nitroimidazoles and Nitrofurans - Nitrofurantoin	256	76	0												1	1	4	19	24	27						
Oxazolidines - Linezolid	4	76	2										2	12	45	15	2									
Penicillins - Penicillin	8	76	17									1	3	14	25	8	8	17								
Streptogramins - Quinupristin/Dalfopristin	1	76	72										2	2	39	17	13	3								

Table Antimicrobial susceptibility testing of E. faecium in Pigs - fattening pigs - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecium	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	76	
Antimicrobials:	lowest	highest
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecium in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecium	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	14																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Amphenicols - Chloramphenicol	32	14	0													7	7									
Fluoroquinolones - Ciprofloxacin	4	14	0									1	3	1	6	3										
Tetracyclines - Tetracycline	4	14	10											4			1		9							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	14	6											1	3	4	5	1								
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	14	0									7	6	1												
Glycylcyclines - Tigecycline	0.25	14	0				1		3	4	6															
Lincosamides - Lincomycin	8	14	0											3			11									
Macrolides - Erythromycin	4	14	6									4				4	6									
Nitroimidazoles and Nitrofurans - Nitrofurantoin	256	14	0															3	8	3						
Oxazolidines - Linezolid	4	14	0										1		10	3										
Penicillins - Penicillin	8	14	1									2		3	7		1	1								
Streptogramins - Quinupristin/Dalfopristin	1	14	9										4	1	8			1								

Table Antimicrobial susceptibility testing of E. faecium in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecium	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	14	
Antimicrobials:	lowest	highest
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecalis in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecalis	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	164																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Streptomycin	512	164	77																				87		77	
Amphenicols - Chloramphenicol	32	164	0													5	129	17	13							
Fluoroquinolones - Ciprofloxacin	4	164	0										3	61	47	53										
Tetracyclines - Tetracycline	4	164	138											26			1	1	136							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	164	2									1	5	46	84	26	2									
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	164	0										21	100	37	6										
Glycylcyclines - Tigecycline	0.25	164	2						5	62	86	9	2													
Lincosamides - Lincomycin	8	164	0														164									
Macrolides - Erythromycin	4	164	129									18	10	2	4	1	129									
Nitroimidazoles and Nitrofurans - Nitrofurantoin	32	164	3												2	1	98	54	6	3						
Oxazolidines - Linezolid	4	164	0											3	159	2										
Penicillins - Penicillin	8	164	1									2	1	13	133	14		1								
Streptogramins - Quinupristin/Dalfopristin	16	164	24										1	1	3	8	38	89	24							

Table Antimicrobial susceptibility testing of E. faecalis in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecalis	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	164	
Antimicrobials:	lowest	highest
Aminoglycosides - Streptomycin	512	2048
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecium in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecium	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications																								
Isolates out of a monitoring program (yes/no)																									
Number of isolates available in the laboratory	104																								
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Amphenicols - Chloramphenicol	32	104	0												6	50	36	4	8							
Fluoroquinolones - Ciprofloxacin	4	104	0										5	8	30	61										
Tetracyclines - Tetracycline	4	104	90											14				1	89							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	104	13										2	15	35	39	12	1								
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	104	0									8	75	6	14	1										
Glycylcyclines - Tigecycline	0.25	104	2				2		16	53	29	2	2													
Lincosamides - Lincomycin	8	104	0											4	1		99									
Macrolides - Erythromycin	4	104	72									9	2	3	6	12	72									
Nitroimidazoles and Nitrofurans - Nitrofurantoin	256	104	0													1	4	26	43	30						
Oxazolidines - Linezolid	4	104	0											23	74	7										
Penicillins - Penicillin	8	104	14									4	4	19	30	15	18	14								
Streptogramins - Quinupristin/Dalfopristin	1	104	79										7	18	33	31	12	3								

Table Antimicrobial susceptibility testing of E. faecium in Gallus gallus (fowl) - broilers - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecium	Gallus gallus (fowl) - broilers - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	104	
Antimicrobials:	lowest	highest
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecalis in Pigs - fattening pigs - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecalis	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	46																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Streptomycin	512	46	29																				17	1	28	
Amphenicols - Chloramphenicol	32	46	0														22	5	19							
Fluoroquinolones - Ciprofloxacin	4	46	0									1	4	22	11	8										
Tetracyclines - Tetracycline	4	46	44											2					44							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	46	4										5	11	13	13	4									
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	46	0										15	28	3											
Glycylcyclines - Tigecycline	0.25	46	0						1	21	23	1														
Lincosamides - Lincomycin	8	46	0														46									
Macrolides - Erythromycin	4	46	35									3		6	1	1	35									
Nitroimidazoles and Nitrofurans - Nitrofurantoin	32	46	1														31	14		1						
Oxazolidines - Linezolid	4	46	0										1	2	42	1										
Penicillins - Penicillin	8	46	0											7	32	7										
Streptogramins - Quinupristin/Dalfopristin	16	46	10										1	1		1	6	27	10							

Table Antimicrobial susceptibility testing of E. faecalis in Pigs - fattening pigs - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecalis	Pigs - fattening pigs - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	46	
Antimicrobials:	lowest	highest
Aminoglycosides - Streptomycin	512	2048
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecalis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Concentration (µg/ml), number of isolates with a concentration of inhibition equal to

E. faecalis	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications																									
Isolates out of a monitoring program (yes/no)																										
Number of isolates available in the laboratory	2																									
Antimicrobials:	Cut-off value	N	n	<=0.002	<=0.004	0.008	0.015	0.016	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>4096
Aminoglycosides - Streptomycin	512	2	1																				1		1	
Amphenicols - Chloramphenicol	32	2	0														2									
Fluoroquinolones - Ciprofloxacin	4	2	0									1		1												
Tetracyclines - Tetracycline	4	2	2																2							
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	4	2	0											1	1											
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	4	2	0										2													
Glycylcyclines - Tigecycline	0.25	2	0							2																
Lincosamides - Lincomycin	8	2	0														2									
Macrolides - Erythromycin	4	2	0									1		1												
Nitroimidazoles and Nitrofurans - Nitrofurantoin	32	2	0														1	1								
Oxazolidines - Linezolid	4	2	0												2											
Penicillins - Penicillin	8	2	0												1	1										
Streptogramins - Quinupristin/Dalfopristin	16	2	0														2									

Table Antimicrobial susceptibility testing of E. faecalis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

E. faecalis	Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Monitoring - EFSA specifications	
Isolates out of a monitoring program (yes/no)		
Number of isolates available in the laboratory	2	
Antimicrobials:	lowest	highest
Aminoglycosides - Streptomycin	512	2048
Amphenicols - Chloramphenicol	2	32
Fluoroquinolones - Ciprofloxacin	0.12	4
Tetracyclines - Tetracycline	1	32
Glycopeptides (Cyclic peptides, Polypeptides) - Daptomycin	0.25	16
Glycopeptides (Cyclic peptides, Polypeptides) - Vancomycin	0.25	32
Glycylcyclines - Tigecycline	0.015	0.5
Lincosamides - Lincomycin	1	8
Macrolides - Erythromycin	0.25	8
Nitroimidazoles and Nitrofurans - Nitrofurantoin	2	64
Oxazolidines - Linezolid	0.5	8
Penicillins - Penicillin	0.25	16
Streptogramins - Quinupristin/Dalfopristin	0.5	32

Table Antimicrobial susceptibility testing of E. faecalis in Cattle (bovine animals) - meat production animals - young cattle (1-2 years) - Slaughterhouse - Domestic - Monitoring - EFSA specifications - Objective sampling - Not applicable - animal sample - faeces - quantitative data [Dilution method]

Table Cut-off values for antibiotic resistance of E. faecalis in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		512	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Tetracyclines	Tetracycline		4	

Table Cut-off values for antibiotic resistance of E. faecalis in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		512	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Tetracyclines	Tetracycline		4	

Table Cut-off values for antibiotic resistance of E. faecalis in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		512	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Tetracyclines	Tetracycline		4	

Table Cut-off values for antibiotic resistance of E. faecium in Animals

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		128	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		4	

Table Cut-off values for antibiotic resistance of E. faecium in Feed

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		128	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		4	

Table Cut-off values for antibiotic resistance of E. faecium in Food

Test Method Used	Standard methods used for testing

			Concentration (microg/ml)	Zone diameter (mm)
		Standard	Resistant >	Resistant <=
Aminoglycosides	Gentamicin		32	
	Streptomycin		128	
Amphenicols	Chloramphenicol		32	
Fluoroquinolones	Ciprofloxacin		4	
Glycopeptides (Cyclic peptides, Polypeptides)	Vancomycin		4	
Macrolides	Erythromycin		4	
Oxazolidines	Linezolid		4	
Penicillins	Ampicillin		4	
Streptogramins	Quinupristin/Dalfopristin		1	
Tetracyclines	Tetracycline		4	

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1 CRONOBACTER

4.1.1 General evaluation of the national situation

4.1.2 Cronobacter in foodstuffs

Table Cronobacter in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Cronobacter	Cronobacter sakazakii	Cronobacter spp, unspecified
Infant formula - dried - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	71	1	1	0
Foodstuffs intended for special nutritional uses - dried dietary foods for special medical purposes intended for infants below 6 months - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	14	0	0	0

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES

4.2 HISTAMINE

4.2.1 General evaluation of the national situation

4.2.2 Histamine in foodstuffs

Table Histamine in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units in non-conformity	<= 100 mg/kg	>100 - <= 200 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	200g	724	13	1	0
Fish - Fishery products which have undergone enzyme maturation treatment in brine - Retail - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	200g	86	5	1	0

	>200 - <= 400 mg/kg	> 400 mg/kg
Fish - Fishery products from fish species associated with a high amount of histidine - not enzyme maturated - Retail - Surveillance	5	7
Fish - Fishery products which have undergone enzyme maturation treatment in brine - Retail - Surveillance	2	2

Table Histamine in food

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES.

4.3 STAPHYLOCOCCAL ENTEROTOXINS

4.3.1 General evaluation of the national situation

4.3.2 Staphylococcal enterotoxins in foodstuffs

Table Staphylococcal enterotoxins in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from cows' milk - soft and semi-soft - made from raw or low heat-treated milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	10	0
Cheeses made from cows' milk - soft and semi-soft - made from pasteurised milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	41	0
Cheeses made from cows' milk - hard - made from pasteurised milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	1	0
Cheeses made from goats' milk - soft and semi-soft - made from raw or low heat-treated milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	1	0
Cheeses made from goats' milk - soft and semi-soft - made from pasteurised milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	15	0
Cheeses made from goats' milk - hard - made from raw or low heat-treated milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	100 g	3	0

Table Staphylococcal enterotoxins in food

	Source of information	Sampling strategy	Sampler	Sample type	Sample origin	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from sheep's milk - soft and semi-soft - made from raw or low heat-treated milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	22	2
Cheeses made from sheep's milk - soft and semi-soft - made from pasteurised milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	22	0
Cheeses made from sheep's milk - hard - made from raw or low heat-treated milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	7	0
Cheeses made from sheep's milk - hard - made from pasteurised milk - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	10	0
Dairy products (excluding cheeses) - milk powder and whey powder - Processing plant - Surveillance	F	Objective sampling	Official sampling	food sample	Unknown	Single	25 g	4	0

Footnote:

F: PUBLIC HEALTH SERVICES OF THE AUTONOMOUS COMMUNITIES

5. FOODBORNE

Foodborne outbreaks are incidences of two or more human cases of the same disease or infection where the cases are linked or are probably linked to the same food source. Situation, in which the observed human cases exceed the expected number of cases and where a same food source is suspected, is also indicative of a foodborne outbreak.

A. Foodborne outbreaks

System in place for identification, epidemological investigations and reporting of foodborne outbreaks

Royal Decree 2210/1995, december 25, by Epidemiological Surveillance National Net is created.

Notifiable Disease Surveillance System (NDSS)

In December of 1995 the National Network of Epidemiological Surveillance was created by law.
During 1997 the protocols of statutory notification of diseases were approved and implemented in Spain.
In Spain the Autonomous Regions have wide powers with respect to epidemiological surveillance and national decisions are usually taken by consensus.
All practising doctors are obliged to notify, both those in the public health service and in private practice, and both those practising outside and within hospitals. On occasions the appearance of cases and outbreaks is detected by other means (from the mass media, from citizens complants, etc.) and in these cases the information is checked and if confirmed it is incorporated into the system at the corresponding level.
The notification may be carried out using a variety of systems: mail, fax, telephone, e-mail, etc. Presently all the regions (and in many cases levels below) transmit the data by e-mail. A network is being developed for the National Epidemiological Surveillance Network which will permit the flow of data from the local level.

The notification of outbreaks is mandatory and standardised. All the outbreaks must be reported immediately at the regional level. At the national level it is obligatory to report immediately only those outbreaks which, by law, are defined as being supra-communitary (considered to be of national interest) in order to facilitate their rapid control, where as the rest of the outbreaks are reported quarterly. Some regions have set up early warning systems in order to support doctors in reporting and investigating outbreaks. A similar national system is entering into operation.
In 1997 a uniform outbreak reporting format (variables and codification) was developed in all of Spain in accordance with the one recommended by the WHO Programme. The report includes relevant information such as agent, food involved, place of consumption and contributing factors.
The results of the statistical and epidemiological analysis are disseminated in annual reports. In addition they are published in epidemiological bulletins (national, regional and other). The weekly national epidemiological bulletin can be found at:
http://www.isciii.es/jsps/centros/epidemiologia/boletinesSemanal.jsp
In Spain the investigation of outbreaks of any diseases in humans is regulated within the National Epidemiological Surveillance Network.
The responsibility and coordination falls on the epidemiologist charged with the investigation of each outbreak. In foodborne outbreaks this is also the case, but in close coordination with those who have to investigate.

Description of the types of outbreaks covered by the reporting:

The Spanish System covers all type of outbreaks, family, general and international outbreak

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

In 2011 has been comunicatted 424 outbreaks, 165 of them with strong evidence. 1930 patients was involving in strong evidence outbreak

Relevance of the different causative agents, food categories and the agent/food category combinations

Salmonella is the agent more frequently implied in foodborne outbreak, emphasizing S. Enteritidis.

The food implied in its majority was eggs and eggs products
Eggs
Meat
Milk

Relevance of the different type of places of food production and preparation in outbreaks

The place of consumption of the implied food was, mainly, the familiar home, being the time of the year with more foodborne outbreaks the summer and contributor factor more frequent the inadequate temperature.

Control measures or other actions taken to improve the situation

Outbreak investigations as well as necessary control measures are carried out by the health authorities of the autonomous regions.

Table Foodborne Outbreaks: summarised data

	Weak evidence or no vehicle outbreaks					
	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Salmonella - S. Typhimurium	8	115	21	0	2	10
Salmonella - S. Enteritidis	45	343	72	2	64	109
Salmonella - Other serovars	63	258	38	0	10	73
Campylobacter	6	233	6	0	6	12
Listeria - Listeria monocytogenes	0	unknown	unknown	unknown	0	0
Listeria - Other Listeria	0	unknown	unknown	unknown	0	0
Yersinia	0	unknown	unknown	unknown	0	0
Escherichia coli, pathogenic - Verotoxigenic E. coli (VTEC)	2	24	2	0	0	2
Bacillus - B. cereus	1	3	0	0	2	3
Bacillus - Other Bacillus	0	unknown	unknown	unknown	0	0
Staphylococcal enterotoxins	4	106	1	0	9	13
Clostridium - Cl. botulinum	1	2	2	0	1	2
Clostridium - Cl. perfringens	5	173	0	0	2	7

	Weak evidence or no vehicle outbreaks					
	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Clostridium - Other Clostridia	1	4	0	0	0	1
Other Bacterial agents - Brucella	0	unknown	unknown	unknown	0	0
Other Bacterial agents - Shigella	1	7	1	0	1	2
Other Bacterial agents - Other Bacterial agents	0	unknown	unknown	unknown	1	1
Parasites - Trichinella	0	unknown	unknown	unknown	1	1
Parasites - Giardia	0	unknown	unknown	unknown	0	0
Parasites - Cryptosporidium	0	unknown	unknown	unknown	0	0
Parasites - Anisakis	0	unknown	unknown	unknown	0	0
Parasites - Other Parasites	0	unknown	unknown	unknown	0	0
Viruses - Norovirus	7	141	1	0	9	16
Viruses - Hepatitis viruses	1	2	1	0	0	1
Viruses - Other Viruses	4	95	0	0	0	4
Other agents - Histamine	5	18	0	0	11	16
Other agents - Marine biotoxins	1	173	0	0	1	2
Other agents - Other Agents	0	unknown	unknown	unknown	3	3

	Weak evidence or no vehicle outbreaks					
	Number of outbreaks	Human cases	Hospitalized	Deaths	Strong evidence Number of Outbreaks	Total number of outbreaks
Unknown agent	110	1118	12	0	35	145

Table Foodborne Outbreaks: detailed data for Bacillus

Please use CTRL for multiple selection fields

B. cereus

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Buffet meals
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

B. cereus

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Residential institution (nursing home or prison or boarding school)
Place of origin of problem	Residential institution (nursing home or prison or boarding school)
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Campylobacter

Please use CTRL for multiple selection fields

Campylobacter spp., unspecified

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

Campylobacter spp., unspecified

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	29
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School or kindergarten
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

C. jejuni

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

C. jejuni

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

C. jejuni

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	35
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

C. jejuni

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School or kindergarten
Place of origin of problem	School or kindergarten
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Clostridium

Please use CTRL for multiple selection fields

C. perfringens

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

C. perfringens

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	26
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

C. botulinum

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Other Bacterial agents

Please use CTRL for multiple selection fields

Shigella - S. sonnei

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	28
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Residential institution (nursing home or prison or boarding school)
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Vibrio - V. parahaemolyticus

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Other agents

Please use CTRL for multiple selection fields

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household
Setting	Household
Place of origin of problem	Retail
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	27
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	27
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	3
Number of human cases	14
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Histamine

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Marine biotoxins - ciguatoxin

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Mushroom toxins

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Wax esters (from fish)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Parasites

Please use CTRL for multiple selection fields

Trichinella - T. spiralis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	28
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Salmonella

Please use CTRL for multiple selection fields

S. Kentucky

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Mobile retailer or market/street vendor
Place of origin of problem	Mobile retailer or market/street vendor
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Hadar

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	19
Number of hospitalisations	7
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Farm
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	39
Number of hospitalisations	8
Number of deaths	0
Food vehicle	Bakery products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Retail
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	12
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	33
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	4
Number of human cases	18
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	47
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	11
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Dairy products (other than cheeses)
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	13
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Dairy products (other than cheeses)
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	8
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	30
Number of hospitalisations	24
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	5
Number of human cases	31
Number of hospitalisations	6
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	3
Number of human cases	18
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	22
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Camp or picnic
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Catering on aircraft or ship or train
Place of origin of problem	Catering on aircraft or ship or train
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	11
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	26
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	4
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	5
Number of human cases	42
Number of hospitalisations	9
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 14b

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	34
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 4

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	43
Number of hospitalisations	10
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Camp or picnic
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Enteritidis - PT 6

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	102
Number of hospitalisations	44
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	45
Number of hospitalisations	19
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	16
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. group D

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. group D

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. group D

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

S. group D

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	19
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium, monophasic - DT 138

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium, monophasic - DT 138

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

S. Typhimurium, monophasic - U 311

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Staphylococcal enterotoxins

Please use CTRL for multiple selection fields

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	13
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Canteen or workplace catering
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Cheese
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Cheese
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Meat and meat products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	School or kindergarten
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	3
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Infected food handler
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	44
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Camp or picnic
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

null

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Cheese
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Unknown agent

Please use CTRL for multiple selection fields

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	69
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Camp or picnic
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	31
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	8
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	36
Number of hospitalisations	2
Number of deaths	0
Food vehicle	Buffet meals
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Inadequate heat treatment
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Storage time/temperature abuse
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	9
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	63
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Pig meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Slaughterhouse
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	29
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Drinks, including bottled water
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	3
Number of human cases	9
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	12
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	4
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Tap water, including well water
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Camp or picnic
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Others
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Tap water, including well water
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Unknown
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Eggs and egg products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	3
Number of human cases	37
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Mixed food
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	7
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Broiler meat (Gallus gallus) and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Household
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	3
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Fish and fish products
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Other foods
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Canteen or workplace catering
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Inadequate chilling
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Turkey meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Hospital/medical care facility
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Other contributory factor
Mixed Outbreaks (Other Agent)	
Additional information	

Unknown

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Bovine meat and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Table Foodborne Outbreaks: detailed data for Viruses

Please use CTRL for multiple selection fields

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	2
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	15
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	10
Number of hospitalisations	1
Number of deaths	0
Food vehicle	Vegetables and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	22
Number of hospitalisations	5
Number of deaths	0
Food vehicle	Fruit, berries and juices and other products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Restaurant or Cafe or Pub or Bar or Hotel or Catering service
Origin of food vehicle	Unknown
Contributory factors	Cross-contamination
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	2
Number of human cases	6
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	Household
Setting	Household
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	12
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Detection of causative agent in food vehicle or its component - Detection of indistinguishable causative agent in humans
Outbreak type	General
Setting	Unknown
Place of origin of problem	Unknown
Origin of food vehicle	Unknown
Contributory factors	Unknown
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	20
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Unknown
Place of origin of problem	Farm
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	

Calicivirus - norovirus (Norwalk-like virus)

	Value
FBO Code	
Number of outbreaks	1
Number of human cases	5
Number of hospitalisations	0
Number of deaths	0
Food vehicle	Crustaceans, shellfish, molluscs and products thereof
More food vehicle information	
Nature of evidence	Analytical epidemiological evidence
Outbreak type	General
Setting	Other setting
Place of origin of problem	Farm
Origin of food vehicle	Unknown
Contributory factors	Unprocessed contaminated ingredient
Mixed Outbreaks (Other Agent)	
Additional information	