ZOONOSES MONITORING

PORTUGAL

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 2007

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Portugal**
Reporting Year: **2007**
Institutions and laboratories involved in reporting and monitoring:

Laboratory name	Description	Contribution
DGV Direcção Geral de Veterinária	National Veterinary Authority	Reporting Authority Co-ordination of report production
LNIV Laboratório Nacional de Investigação Veterinária	National Veterinary Laboratory	
ASAE Autoridade de Segurança Alimentar e Económica	National Authority for Food Safety	
DGS - Direcção Geral de Saúde	National Authority for Human Health	Data on Zoonoses and zoonotic agents in humans and foodborne outbreaks
INSA Instituto Nacional de Saúde Dr. Ricardo Jorge	Reference laboratory belonging to the Ministry of Health	Data on Zoonoses and zoonotic agents in humans and foodborne outbreaks
IBCP Instituto Bacteriológico Câmara Pestana	Scientific Institute - National Reference Laboratory for Rabies	
R.A. MADEIRA	Veterinary Services of Região Autónoma da Madeira	
R.A. AÇORES	Veterinary Services of Região Autónoma dos Açores	
Laboratório de Viseu	Regional Veterinary Laboratory	
Laboratório do Algarve	Regional Veterinary Laboratory	
Laboratório de Alcains	Regional Veterinary Laboratory	
FMV - Faculdade de Medicina Veterinária	Veterinary School in Lisbon	

PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/ 99/ EC[1]. 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 Portugal during the year 2007. 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.

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[1] 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

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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:

DGV - Direcção Geral de Veterinária
DGRF - Direcção Geral dos Recursos Florestais

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks	Year*	Number of slaughtered animals	Year*	Livestock numbers (live animals)	Year*	Number of holdings	Year*
Cattle (bovine animals)	in total			374536		1312000		66602	
Deer	farmed - in total (1)					2000		205	
Ducks	in total							23	
Gallus gallus (fowl)	breeding flocks, unspecified - in total (2)	140						115	
	laying hens							192	
	broilers							2357	
Goats	in total			155600					
Ostriches	farmed							15	
Pigs	in total			4405513		2812000		7979	
Rabbits	farmed					108500		171	
	in total (Farmed game wild rabbits)					15900		163	
Sheep	in total			1187737					
Solipeds, domestic	horses - in total					47600	2005		
Turkeys	in total							268	
Wild boars	farmed - in total (3)					200		30	
Dogs	in total					1500000	2005		
Quails	in total							35	
Sheep and goats	in total					2782000		74834	
Birds	in total (Game birds, farmed)							337	

(1): Game deer, includes roe, fallow and red deer
(2): Flocks under the Control Program for Salmonella
(3): Game animals

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

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

Salmonellosis in animals (other than Gallus gallus):
The animals are sampled on a voluntary basis. The data come from sick animals sent to laboratory for bacteriological analysis or to control herds.
There is a Control Programme for Gallus gallus (breeding flocks). There is also going a baseline study on the prevalence of salmonella in broilers (finished).
Control measures are been taken in positive flocks of laying hens.
There is also going on a baseline study (started on 2007), on the prevalence of salmonella in slaugherpigs and turkeys.

Additional information

Diagnostic techniques:
Foodstuffs/ Feedingstuffs - Screening: VIDAS SLM (AFNOR validation). Confirmation: ISO 6579 (2002).
Serology: Rapid Plate Agglutination for S.pullorum/ gallinarum.
Bacteriology: ISO 6579 (2002) and D Annex.
- Pre-enrichment in Buffered Peptone Water (for faeces, bedding, nests samples and fluffy)
- Selective enrichment in MSRV (modified semisolid Rappaport Vassiliadis) and Rappaport Vassiliadis with Soja broth.
- Plating on solid media XLD and SM2 Agar.
- Biochemical reactions by 32E or API 20E strips.
Typing of Salmonella: Serotyping by Kauffman/ White technique (searching of O antigens by plate agglutination and H antigens by tube agglutination).
Serotyping of isolates is performed at Laboratório Nacional de Investigação Veterinária (NRL).
Phagetyping for Salmonella Enteritidis and Salmonella Typhimurium has started on January 1999, see data on the tables (not in routine analyses).
Antimicrobial Susceptability testing of Salmonella: Resistance to antimicrobials is performed at Laboratório Nacional de Investigação Veterinária (NRL for Salmonella)
· The resistance to antimicrobials is performed by disk diffusion Method in Mueller Hinton Plates.
· The antimicrobials tested are: AMP10, AMC30, CF30, CMX30, CTX30, SxT25, G10, K30, TE30, C30, S10, NA30, UB30, N30, D30, ENR5 .
· The zone diameters are evaluated, following NCCLS Vol.19 nº1, January 99.

2.1.2. Salmonellosis in humans

2.1.3. Salmonella in foodstuffs

Table Salmonella in poultry meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from broilers (Gallus gallus)								
fresh								
- at slaughterhouse	RA MADEIRA	batch	25g	15	1			1
- at processing plant		single						
- at slaughterhouse - Surveillance - official controls	Laboratório de Viseu	single	25g	7	1			1
minced meat								
intended to be eaten cooked								
- at retail	Laboratório de Segurança Alimentar	batch	10g	15	4	4		
meat products								
cooked, ready-to-eat								
- at retail	Laboratório de Segurança Alimentar	batch	25g	5	0			
Meat from turkey								
meat preparation								
intended to be eaten cooked								
- at retail	Laboratório de Segurança Alimentar	batch	10g	10	1			1

Table Salmonella in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Milk, cows'								
raw								
intended for direct human consumption								
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25ml	5	0			
pasteurised milk								
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25ml	5	0			
Milk, goats'								
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products								
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25ml	7	0			
Milk, sheep's								
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products								
- Surveillance - HACCP or own checks by industry	Lab.Viseu	batch	25ml	6	0			
Cheeses made from cows' milk								
- at retail	Laboratório de Segurança Alimentar	batch	25g	87	0			
soft and semi-soft								
made from pasteurised milk								
- at processing plant - domestic production (1)	LNIV	batch	25g	6	0			

- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	1g	12	0			
Cheeses made from goats' milk								
- at retail	Laboratório de Segurança Alimentar	batch	25g	26	0			
soft and semi-soft								
made from raw or low heat-treated milk								
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25g	5	0			
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	1g	3	0			
Cheeses made from sheep's milk								
- at retail	Laboratório de Segurança Alimentar	batch	25g	75	0			
soft and semi-soft								
made from raw or low heat-treated milk								
- Surveillance - HACCP or own checks by industry	Lab.Viseu	batch	25g	2	0			
made from pasteurised milk								
- at processing plant - domestic production (2)	LNIV	batch	25g	1	0			
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	1g	7	0			
Dairy products (excluding cheeses)								
ice-cream								
- at retail - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25g	5	0			
Cheeses, made from unspecified milk or other animal milk								
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	1g	68	0			
Cheeses, made from mixed milk from cows, sheep and/ or goats								
hard								
- at processing plant - Surveillance - official controls	R.A. Açores	single	25g	48	0			

(1) : Private Control
(2) : Private Control

Table Salmonella in red meat and products thereof

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Meat from pig								
fresh								
- at retail - Surveillance - HACCP or own checks by industry	Lab. Viseu	single	25g	1	0			
minced meat								
intended to be eaten cooked								
- at retail	Laboratório de Segurança Alimentar	batch	10g	75	2			2
meat preparation								
intended to be eaten raw								
- Surveillance - official controls	R.A. Açores	batch	25g	10	0			
meat products								
raw but intended to be eaten cooked								
- at retail	Laboratório de Segurança Alimentar	batch	25g	125	0			
- Surveillance - official controls	RAMadeira	single	25g	1	0			
cooked, ready-to-eat								
- at retail	Laboratório de Segurança Alimentar	batch	25g	465	6		1	5
- at retail - Surveillance - HACCP or own checks by industry	Lab. Viseu	single	25g	1	0			
- Surveillance - official controls (Bacon)	R.A. Açores	batch	25g	5	0			
cooked ham								
- Surveillance - official controls	R.A. Açores	batch	10	0				
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	25	1			1
Meat from bovine animals								

minced meat									
intended to be eaten cooked									
- at retail		Laboratório de Segurança Alimentar	batch	10g	135	3			3
- Surveillance - official controls		R.A. Açores	batch	25g	2	0			
meat products									
raw but intended to be eaten cooked									
- Surveillance - official controls		R.A. Açores	batch	25g	1	0			
Other products of animal origin									
- Surveillance - official controls (Liver sauce)		R.A. Açores	batch	25g	5	0			
Other processed food products and prepared dishes									
unspecified									
ready-to-eat foods									
- at processing plant - Surveillance - HACCP or own checks by industry		Laboratório de Alcains	single	25g	6	0			

Table Salmonella in other food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Eggs								
table eggs								
- at packing centre	RAMadeira	single	25 g	2	0			
- at retail	Laboratório de Segurança Alimentar	batch	25mL	15	0			
- at retail - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25g	5	0			
- at packing centre - Surveillance - HACCP or own checks by industry	Lab.Viseu	batch	25g	17	0			
Egg products								
- at retail	Laboratório de Segurança Alimentar	batch	25mL	15	0			
Fishery products, unspecified								
- at processing plant	RA MADEIRA	single	25g	10	0			
- at retail	RA MADEIRA	single	25g	1	1			1
- at processing plant - Surveillance - official controls (Tuna patê)	R.A. Açores	single	25g	5	0			
Crustaceans								
unspecified								
cooked								
- at retail	Laboratório de Segurança Alimentar	batch	25g	70	0			
shrimps								
raw								
frozen (2)	LNIV	batch	25g	10	0			
Molluscan shellfish								
cooked								

- at retail	Laboratório de Segurança Alimentar	batch	25g	20	0			
raw								
frozen (3)	LNIV	batch	25g	6	0			
Live bivalve molluscs (1)	LNIV	batch	25g	1	0			
Seeds, sprouted								
non-ready-to-eat	RAMADEIRA	single	25g	26	0			
Fruits and vegetables								
precut								
ready-to-eat	Laboratório Segurança Alimentar	batch	25g	175	0			
Juice								
fruit juice								
unpasteurised	Laboratório de Segurança Alimentar	batch	25mL	15	0			
Bakery products								
- at retail - Surveillance	Laboratório de Segurança Alimentar	batch	25g	130	0			
Other processed food products and prepared dishes								
- at retail - Surveillance	RAMADEIRA	single	25g	26	3	2		1

(1) : Official Control
(2) : Official Control
(3) : Official Control

2.1.4. Salmonella in animals

A. Salmonella spp. in Gallus gallus - breeding flocks for egg production and flocks of laying hens

Monitoring system

Sampling strategy

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

The sampling frame shall cover all adult breeding flocks of Gallus gallus comprising at least 250 birds.
Sampling is accomplished by the operator and by the official authority.
At the initiative of the operator sampling is done at the holding. Samples will be taken at day old, 4 weeks old birds, 2 weeks before laying phase and during the laying period, every two weeks.
At 4 weeks old and at two weeks before the laying phase sampling shall consist of pooled faeces made up of separate samples of fresh faeces each weighing no less than 1 g taken at random from a number of sites in the building in which the birds are kept.
During the laying phase sampling will consist of boot swabs representative of all parts of the house; all separate pens will be included. In cage breeding flocks, sampling consists of of naturally mixed faeces from dropping belts, scrapers or deep pits - 2 samples of at least 150 g will be collected to be tested individually.
The operator may also sample every two weeks at the hatchery.For each breeding flock the sample consists of one composite sample of a visibly soiled hatcher basket liners taken at random from five separate hatcher baskets to reach a total of at least 1 m2
In cases where hatchers basket liners are not used 10 g broken eggshells shall be taken from 25 separate hatcher baskets, crushed, mixed and a 25 g sub sample taken)
Meconium of 250 birds
50 dead birds in the shell
At the initiative of the official services sampling is done at Within four weeks following moving to laying phase or laying unit (24 weeks)
during the production (44 weeks)
towards the end of the laying phase, not earlier than 8 weeks before the end of the production cycle (64 weeks)

Laying hens flocks

The programme is implemented only in 2008

Methods of sampling (description of sampling techniques)

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

The sample shall consist of a minimum of one composite sample of visibly soiled hatcher basket liners

He must sample all dead birds at arrival

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

At 4 weeks-old and 2 weeks before the laying phase the sampling
will consist of faecal samples
-Pooled faeces made up of separate samples of fresh faeces each weighing no less than 1 g taken at random from a number of sites in the building in which the birds are kept

Breeding flocks: Production period

During the laying phase
- 5 Pairs of boot swabs – walking around to be done in a way which will sample representatively all parts of the sector. All separate pens within a house will be included in sampling.
- In cage breeding flocks, sampling consists of naturally mixed faeces from dropping belts, scrapers or deep pits - 2 samples of at least 150 g will be collected to be tested individually.

Laying hens: Day-old chicks

the programme has started only in 2008

Laying hens: Rearing period

the programme has started only in 2008

Laying hens: Production period

the programme has started only in 2008

Laying hens: Before slaughter at farm

the programme has started only in 2008

Case definition

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

Laying hens: Day-old chicks

the programme has started only in 2008

Laying hens: Rearing period

the programme has started only in 2008

Laying hens: Production period

the programme has started only in 2008

Laying hens: Before slaughter at farm

the programme has started only in 2008

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)

Compulsive vaccination against Salmonella enteritidis is done in the restocking, after the destruction of the positive flock.

Laying hens flocks

the programme has started only in 2008

Control program/ mechanisms

The control program/ strategies in place

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

The strategy is to reeinforce surveillance, reeinforce biosecurity measures, slaughter the positive flocks and restocking only when environmental samples are negative for Salmonella, whith birds from flocks or herds that have undergone controls according to the legislation requirements. All birds must be vaccinated against Salmonella enteritidis.
The strategy includes also a close cooperation with the associations of producers to implement diferent means to raise awareness of the producers.The Official Services have developed guidelines for the producer, as a tool in order to guide the implementation of the national programme.

Laying hens flocks

the programme has started only in 2008

Measures in case of the positive findings or single cases

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

When there is a positive case in a flock = Salmonella sp detection
- Notification of the operator
- Keep the flock in sanitary surveillance
- Forcing to keep the update records
- Evaluate the production records
- Forcing to incubate their eggs separately

whenever the results from serotyping are diferent from the serotypes relevant to the national programme , than:
- Additional biosecurity measures
- Free practice – The official control measures are withdrawn.

When the result is serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and/ or S. Infantis than the flock will be under official restriction:
-Flock surveillance (under official control)
-Compulsory sanitary slaughter
-Non-incubated eggs must be destroyed or be treated
-Compensation for owners about all destroyed eggs and animals.
-After the destruction of the positive flock the holding and the environment must be cleaned and disinfected;
-The operator must collect environmental samples;
-The restocking of animals must take place from flocks or herds that have undergone controls according to the legislation requirements;
-All birds must be vaccinated against Salmonella enteritidis.

B. Salmonella spp. in Gallus gallus - breeding flocks for meat production and broiler flocks

Monitoring system

Sampling strategy

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

necessary)

The sampling frame shall cover all adult breeding flocks of Gallus gallus comprising at least 250 birds.
Sampling is accomplished by the operator and by the official authority.
At the initiative of the operator sampling is done at the holding. Samples will be taken at day old, 4 weeks old birds, 2 weeks before laying phase and during the laying period, every two weeks.
At 4 weeks old and at two weeks before the laying phase sampling shall consist of pooled faeces made up of separate samples of fresh faeces each weighing no less than 1 g taken at random from a number of sites in the building in which the birds are kept.
During the laying phase sampling will consist of boot swabs representative of all parts of the house; all separate pens will be included. In cage breeding flocks, sampling consists of of naturally mixed faeces from dropping belts, scrapers or deep pits - 2 samples of at least 150 g will be collected to be tested individually.
The operator may also sample every two weeks at the hatchery.For each breeding flock the sample consists of one composite sample of a visibly soiled hatcher basket liners taken at random from five separate hatcher baskets to reach a total of at least 1 m2
In cases where hatchers basket liners are not used 10 g broken eggshells shall be taken from 25 separate hatcher baskets, crushed, mixed and a 25 g sub sample taken)
Meconium of 250 birds
50 dead birds in the shell
At the initiative of the official services sampling is done at Within four weeks following moving to laying phase or laying unit (24 weeks)
during the production (44 weeks)
towards the end of the laying phase, not earlier than 8 weeks before the end of the production cycle (64 weeks)

Broiler flocks

Th official plan for broiler flocks will be implemented only in 2009.

Methods of sampling (description of sampling techniques)

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

At day old chicks sampling shall consist of a minimum of one composite sample of visibly soiled hatcher liners.
The operator must also sample all birds dead at arrival.

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

sampling consists of pooled faeces made up of separate samples of fresh faeces each weighing no less than 1 g taken at random from a number of sites in the building in which the birds are kept.

Breeding flocks: Production period

Sampling will be done by the use of boot swabs, 5 pairs - walking around in a way wich assures sampling is representative of all parts of the sector. All separate pens within a house will be included in sampling. In cage breeding flocks sampling consists of naturally mixed feaces from dropping belts, scrapers or deep pits, 2 samples of at least 150 g will be collected to be tested individually.

Broiler flocks: Day-old chicks

The Programme for broilers will start in 2009.

Broiler flocks: Rearing period

The programme for broiler flocks will start only in 2009.

Broiler flocks: Before slaughter at farm

The programme for broiler flocks will start only in 2009.

Case definition

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

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

At least one positive sample to serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and / or S. Infantis

Broiler flocks: Day-old chicks

The programme will be implemented only in 2009.

Broiler flocks: Rearing period

The programme will be implemented only in 2009.

Broiler flocks: Before slaughter at farm

The programme will be implemented only in 2009.

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)

Compulsive vaccination against Salmonella enteritidis is done in the restocking, after the destruction of the positive flock.

Control program/ mechanisms

The control program/ strategies in place

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

The strategy is to reeinforce surveillance, reeinforce biosecurity measures, slaughter the positive flocks and restocking only when environmental samples are negative for Salmonella, whith birds from flocks or herds that have undergone controls according to the legislation requirements. All birds must be vaccinated against Salmonella enteritidis.
The strategy includes also a close cooperation with the associations of producers to implement diferent means to raise awareness of the producers.The Official Services have developed guidelines for the producer, as a tool in order to guide the implementation of the national programme.

Broiler flocks

The programme will be implemented in 2009.

Measures in case of the positive findings or single cases

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

When there is a positive case in a flock = Salmonella sp detection
- Notification of the operator
- Keep the flock in sanitary surveillance
- Forcing to keep the update records
- Evaluate the production records

- Forcing to incubate their eggs separately
whenever the results from serotyping are diferent from the serotypes relevant to the national programme , than:
- Additional biosecurity measures
- Free practice – The official control measures are withdrawn.
When the result is serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and/ or S. Infantis than the flock will be under official restriction:
Flock surveillance (under official control)
Compulsory sanitary slaughter
Non-incubated eggs must be destroyed or be treated
Compensation for owners about all destroyed eggs and animals.
After the destruction of the positive flock the holding and the environment must be cleaned and disinfected;
The operator must collect environmental samples;
The restocking of animals must take place from flocks or herds that have undergone controls according to the legislation requirements;
All birds must be vaccinated against Salmonella enteritidis.

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

When there is a positive case in a flock = Salmonella sp detection
- Notification of the operator
- Keep the flock in sanitary surveillance
- Forcing to keep the update records
- Evaluate the production records
- Forcing to incubate their eggs separately
whenever the results from serotyping are diferent from the serotypes relevant to the national programme , than:
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Flock surveillance (under official control)
Compulsory sanitary slaughter
Non-incubated eggs must be destroyed or be treated
Compensation for owners about all destroyed eggs and animals.
After the destruction of the positive flock the holding and the environment must be cleaned and disinfected;
The operator must collect environmental samples;
The restocking of animals must take place from flocks or herds that have undergone controls according to the legislation requirements;
All birds must be vaccinated against Salmonella enteritidis.

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

When there is a positive case in a flock = Salmonella sp detection

- Notification of the operator
- Keep the flock in sanitary surveillance
- Forcing to keep the update records
- Evaluate the production records
- Forcing to incubate their eggs separately

whenever the results from serotyping are diferent from the serotypes relevant to the national programme , than:

- Additional biosecurity measures
- Free practice – The official control measures are withdrawn.

When the result is serotype S. Enteritidis, S. Typhimurium, S. Hadar, S. Virchow and/ or S. Infantis than the flock will be under official restriction:
Flock surveillance (under official control)
Compulsory sanitary slaughter
Non-incubated eggs must be destroyed or be treated
Compensation for owners about all destroyed eggs and animals.
After the destruction of the positive flock the holding and the environment must be cleaned and disinfected;
The operator must collect environmental samples;
The restocking of animals must take place from flocks or herds that have undergone controls according to the legislation requirements;
All birds must be vaccinated against Salmonella enteritidis.

Broiler flocks: Day-old chicks

the programme will begin in 2009

Broiler flocks: Rearing period

the programme will begin in 2009

Broiler flocks: Before slaughter at farm

the programme will begin in 2009

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	S. Hadar	S. Infantis	S. Virchow	Salmonella spp., unspecified
Gallus gallus (fowl)										
parent breeding flocks for meat production line										
during rearing period	RAMADEI	flock	20	13	13					
breeding flocks, unspecified										
during production period										
- at farm - animal sample - faeces - Control or eradication programmes - co-financed by Community - official sampling	DGV	flock	117	18	16	0	0	1	1	

Table Salmonella in other poultry

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Derby	S. Anatum	S. Mbandaka	S. Kottbus
Gallus gallus (fowl)											
laying hens											
day-old chicks	RAMADE	flock	3	1	1						
during production period	Lab.Viseu	flock	1	0							
broilers	LNIV	animal	15	1	1						
day-old chicks	Lab.Viseu	flock	13	5			5				
during rearing period (*)	LNIV	animal	28	4	2	1				1	
	Lab.Viseu	flock	2	1			1				
unspecified	LNIV	animal	19	3	3						
Ducks	LNIV	animal	7	1							1
Turkeys	LNIV	animal	2	0							
meat production flocks											
baseline survey											
- at farm - animal sample - faeces (Baseline Study on the prevalence of Salmonella)	DGV	flock	113	9	0	0		8	1		

Table Salmonella in other birds

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Pigeons	LNIV	animal	46	7		7	
(*)	RAMADEIRA	animal	1	0			
Pheasants	LNIV	animal	3	0			
(*)	RAMADEIRA	animal	1	0			
Partridges	LNIV	animal	9	0			
(")	Lab.Viseu	flock	3	1			1
Psittacidae	RAMADEIRA	animal	2	0			
Parrots	LNIV	animal	3	0			
Birds	LNIV	animal	25	0			
pet animals	Lab.Viseu	animal	1	0			

Table Salmonella in other animals (Part A)

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella spp.	S. Mbandaka	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified	S. Ohio	S. Kingston	S. Bochum	S. Gaminara	S. Give	S. Havana	S. Bredeney	S. Newport	S. Rissen	S. 4,5:i:-	S. Neudorf	S. Duesseldorf
Cattle (bovine animals)	LNIV	animal	52	1						1										
calves (under 1 year)	Laborat	animal	1	0																
	de Alcains																			
(")	Lab.Vis	animal	1	0																
adult cattle over 2 years	Laborat	animal	1	0																
	de Alcains																			
Sheep	Laborat	animal	12	1				1												
	de Alcains																			
(")	LNIV	animal	56	0																
(*)	Lab.Vis	animal	4	0																
Goats	LNIV	animal	54	0																
(*)	Laborat	animal	8	0																
	de Alcains																			
(**)	Lab.Vis	animal	7	0																
Pigs	LNIV	animal	115	6		2	2								1			1		
breeding animals	LNIV	animal	134	24			7										1	10		

fattening pigs **baseline survey** - at slaughterhouse - animal sample - lymph nodes (Baseline study on the prevalence of Salmonella)	Lab.Visc	animal	3	0																							
	DGV	animal	659	156	1	9	57		1				1	7	1		7	22	17								
Solipeds, domestic	LNIV	animal	20	0																							
Cats	RAMAI	animal	3	0																							
pet animals	LNIV	animal	10	0																							
Dogs	RAMAI	animal	4	0																							
pet animals	LNIV	animal	30	0																							
(*)	Lab.Visc	animal	3	2						2																	
Rabbits	LNIV	animal	25	0																							
(*)	Lab.Visc	flock	9	0																							
Deer	LNIV	animal	4	0																							
Zoo animals, all	LNIV	animal	142	7			1	4				1															1

Table Salmonella in other animals (Part B)

	S. Eboko	S. Panama	S. Infantis	S. Agona	S. Anatum	S. Bovismorbificans	S. Derby
Cattle (bovine animals)							
calves (under 1 year)							
(")							
adult cattle over 2 years							
Sheep							
(")							
(*)							
Goats							
(*)							
(**)							
Pigs							
breeding animals							6
fattening pigs							
baseline survey							
- at slaughterhouse - animal sample - lymph nodes (Baseline study on the prevalence of Salmonella)	1	1	1	5	6	2	17
Solipeds, domestic							
Cats							

pet animals							
Dogs							
pet animals (*)							
Rabbits							
(*)							
Deer							
Zoo animals, all							

2.1.5. Salmonella in feedingstuffs

Table Salmonella in feed material of animal origin

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of land animal origin								
meat meal (1)	LNIV	batch	25g	1	0			
poultry offal meal (2)	LNIV	batch	25g	1	0			
Feed material of marine animal origin								
fish meal (3)	LNIV	batch	25g	2	0			
(") (5)	LNIV	batch	25g	4	2			2
fish silage (4)	LNIV	batch	25g	9	1			1

(1) : Official Control
(2) : Official Control
(3) : Private Control
(4) : Official Control
(5) : Official Control

Table Salmonella in other feed matter

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of cereal grain origin								
maize (1)	LNIV	batch	25g	2	0			
- Surveillance - official controls	R.A. Açores	single	25g	2	0			
Feed material of oil seed or fruit origin								
sunflower seed derived (2)	LNIV	batch	25g	1	0			

(1) : Official Control
(2) : Official Control

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella spp.	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified	S. 6,7:-:-	S. Anatum
Compound feedingstuffs for cattle										
final product (1)	LNIV	batch	25g	37	1					1
(") (7)	LNIV	batch	25g	4	0					
Compound feedingstuffs for pigs										
final product (2)	LNIV	batch	25g	33	1				1	
(") (8)	LNIV	batch	25g	4	0					
Compound feedingstuffs for poultry (non specified)										
final product (3)	LNIV	batch	25g	2	0					
Compound feedingstuffs for poultry -breeders										
final product (4)	LNIV	batch	25g	2	0					
Compound feedingstuffs for poultry - laying hens										
final product (5)	LNIV	batch	25g	8	0					
Compund feedingstuffs for poultry - broilers										
final product (6)	LNIV	batch	25g	11	0					
(") (9)	LNIV	batch	25g	4	0					
Compound feedingstuffs for horses										
final product (10)	LNIV	batch	25g	7	0					
Compound feedingstuffs for rabbits										
final product (11)	LNIV	batch	25g	8	0					
Compound feedingstuffs for sheep										
final product (12)	LNIV	batch	25g	14	0					
(") (14)	LNIV	batch	25g	3	0					
Compound feedingstuffs for turkeys										
final product (13)	LNIV	batch	25g	3	0					

(1) : Official Control
(2) : Official Control

(3) : Official Control
(4) : Private Control
(5) : Official Control
(6) : Official Control
(7) : Private Control
(8) : Private Control
(9) : Private Control
(10) : Official Control
(11) : Official Control
(12) : Official Control
(13) : Official Control
(14) : Private Control

2.1.6. Salmonella serovars and phagetype distribution

The methods of collecting, isolating and testing of the Salmonella isolates are described in the chapters above respectively for each animal species, foodstuffs and humans. The serotype and phagetype distributions can be used to investigate the sources of the Salmonella infections in humans. Findings of same serovars and phagetypes in human cases and in foodstuffs or animals may indicate that the food category or animal species in question serves as a source of human infections. However as information is not available from all potential sources of infections, conclusions have to be drawn with caution.

Table Salmonella serovars in animals

Serovars		Pigs - fattening pigs - baseline survey - at slaughterhouse - animal sample - lymph nodes (Baseline study on the prevalence of Salmonella)		Gallus gallus (fowl) - breeding flocks, unspecified - at farm - animal sample - faeces - Control or eradication programmes - co-financed by Community - official sampling		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry		Turkeys - meat production flocks - baseline survey - at farm - animal sample - faeces (Baseline Study on the prevalence of Salmonella)	
		M	C	M	C	M	C	M	C	M	C	M	C	M	C
Sources of isolates (*)															
Number of isolates in the laboratory	N=	156		37										9	
Number of isolates serotyped	N=	156	0	37	0	0	0	0	0	0	0	0	0	9	0
Number of isolates per type															
S. Agona		5													
S. Anatum		6												1	
S. Bovismorbificans		2													

S. Derby	17												8	
S. Eboko	1													
S. Enteritidis	9		31											
S. Gaminara	1													
S. Give	7													
S. Havana	1													
S. Infantis	1		5											
S. Mbandaka	1													
S. Newport	7													
S. Ohio	1													
S. Panama	1													
S. Rissen	22													
S. Typhimurium	57													
S. Virchow			1											
S. 4,5:i:-	17													

Footnote

(*) M : Monitoring, C : Clinical
dgv

Table Salmonella Enteritidis phagetypes in animals

Phagetype		Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Other poultry	
Sources of isolates (*)		M	C	M	C	M	C	M	C
Number of isolates in the laboratory	N=					3			
Number of isolates phagetyped	N=	0	0	0	0	0	0	0	0

Footnote

(*) M : Monitoring, C : Clinical

2.1.7. Antimicrobial resistance in Salmonella isolates

Antimicrobial resistance is the ability of certain microorganisms to survive or grow in the presence of a given concentration of antimicrobial agent that usually would kill or inhibit the microorganism species in question. Antimicrobial resistant Salmonella strains may be transferred from animals or foodstuffs to humans.

Table Antimicrobial susceptibility testing of S.Enteritidis in animals

n = Number of resistant isolates

S. Enteritidis

	Cattle (bovine animals)		Pigs		Gallus gallus (fowl)		Turkeys		Gallus gallus (fowl) - laying hens		Gallus gallus (fowl) - broilers	
Isolates out of a monitoring programme											yes	
Number of isolates available in the laboratory											3	
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides												
Gentamicin											1	1
Streptomycin											1	1
Amphenicols												
Chloramphenicol											1	1
Cephalosporins												
Cefalexin											1	1
Cefotaxim											1	1
Fluoroquinolones												
Ciprofloxacin											1	0
Penicillins												
Ampicillin											1	1
Quinolones												
Nalidixic acid											1	0
Tetracyclines												
Tetracyclin											1	0
Trimethoprim											1	1

Table Antimicrobial susceptibility testing of Not typeable in All animals - Control or eradication programmes (Gallus gallus, dog, cat, psitacidae) - quantitative data [Diffusion method]

	Not typeable
	All animals - Control or eradication programmes (Gallus gallus, dog, cat, psitacidae)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	16

Antimicrobials:	Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to																																
	Break point	**N**	**n**	**<=6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Aminoglycosides																																	
Gentamicin	12	16	0											1			7	1	1	2		1	1	2									
Streptomycin	11	16	2				1		1			1	1		2	1	6		2		1												
Amphenicols																																	
Chloramphenicol	12	16	2			1			1			1		2			6			2		2		1									
Cephalosporins																																	
Cefalexin	11	16	2				1		1				2			1	6		2		3												
Cefotaxim	14	16	0															6		2	1	2	1	1	3								
Fluoroquinolones																																	
Ciprofloxacin	15	16	3					1				1	1	1	1	1	5		1	1	2		1										
Penicillins																																	
Ampicillin	13	16	5		1			1		1	2				3	1	4		2	1													
Quinolones																																	
Nalidixic acid	13	16	16	1	1		2	2	2	1	7																						
Tetracyclines																																	
Tetracyclin	14	16	11			2		2	1	1		5		2	2				1														
Trimethoprim	10	16	2			1		1				1			2		6	1		2		1	1										

Table Breakpoints for antibiotic resistance testing in Animals

Test Method Used

Disc diffusion

Standards used for testing

NCCLS

SFM

Salmonella	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol							30	18		12
Florfenicol										
Tetracyclines										
Tetracyclin							30	19		14
Fluoroquinolones										
Ciprofloxacin							5	21		15
Enrofloxacin										
Quinolones										
Nalidixic acid							30	19		13
Trimethoprim							25	16		10
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin							10	15		11
Gentamicin							10	15		12
Neomycin							30	15		12
Kanamycin							30	18		13
Trimethoprim + sulfonamides										
Cephalosporins										
Cefalexin										
Cefotaxim										
3rd generation cephalosporins										
Penicillins										
Ampicillin										

2.2. CAMPYLOBACTERIOSIS

2.2.1. General evaluation of the national situation

A. Thermophilic Campylobacter general evaluation

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

There is no official program for this zoonosis.

Additional information

There is no official program for this zoonosis.
Diagnostic techniques:
Foodstuffs - Screening: VIDAS CAM. Confirmation: Internal method based on ISO 10272.
- Typing of isolates by Lior method.
Other than foodstuffs:
- Samples from sheathwashings, semen, intestinal scrapings and feces are plated in Campylobacter agar or Brucella agar supplemented with: SR 69, SR84, SR 85 (C. foetus), SR 117 (all from Oxoid) and selective media Campylosel (Biomérieux)and skirrow Campylobacter selective Agar (Merck).
- Biochemical identification by API system.

2.2.2. Campylobacteriosis in humans

2.2.3. Campylobacter in foodstuffs

Table Campylobacter in poultry meat

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for thermophilic Campylobacter spp.	C. coli	C. lari	C. upsaliensis	C. jejuni	Thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus)										
fresh	FMV	single		17	9	6			3	

2.2.4. Campylobacter in animals

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for thermophilic Campylobacter spp.	C. jejuni	C. coli	C. lari	C. upsaliensis	Thermophilic Campylobacter spp., unspecified
Cattle (bovine animals)									
dairy cows	LNIV	animal	1	0					
Goats	LNIV	animal	2	0					
Zoo animals, all									
- Clinical investigations	LNIV	animal	5	0					

2.2.5. Antimicrobial resistance in Campylobacter isolates

2.3. LISTERIOSIS

2.3.1. General evaluation of the national situation

A. Listeriosis general evaluation

Additional information

* The searching of Listeria started on 1996 for raw milk and milk cheese (Portaria nº 533/ 93 from 21st of May has been updated by Portaria 56/ 96).
Diagnostic tecnhiques:
Foodstuffs/ Feedingstuffs -Screening: VIDAS LMO2 (AFNOR validation). Detection:ISO 11290-1 (1996) and Amendment 1 (2004). Enumeration: ISO 11290-2 (1998) and Amendment 1 (2004).
Other than foodstuffs - Internal method - culture on:
- Palcam agar, Oxford agar and Blood agar.
- Biochemical reactions by API Coryne or API Listeria strips.

2.3.2. Listeriosis in humans

2.3.3. Listeria in foodstuffs

Table Listeria monocytogenes in milk and dairy products

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Milk, cows'										
raw milk for manufacture										
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	1ml	5	0	5	0	0	0	
Milk, sheep's										
raw milk for manufacture										
intended for manufacture of raw or low heat-treated products										
- Surveillance - HACCP or own checks by industry	Lab.Viseu	batch	1ml	6	1	6	1	0	0	
Milk, goats'										
raw milk for manufacture										
intended for manufacture of raw or low heat-treated products										
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	1ml	7	0	7	0			
Cheeses made from cows' milk										
soft and semi-soft										
made from raw or low heat-treated milk										
- at retail	Laboratório de Segurança Alimentar	single	25g	40	0			40		
made from pasteurised milk										
- at retail	Laboratório de Segurança Alimentar	batch	25g	137	0	15		122		

- at processing plant - domestic production (1)	LNIV	batch	25g	5	0	5		5		
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	12	0	12	0	0		
Cheeses made from goats' milk										
soft and semi-soft										
made from raw or low heat-treated milk										
- at retail	Laboratório de Segurança Alimentar	batch	25g	52	0	0		52		
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25g	5	0	5	0			
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	3	0	3	0			
Cheeses made from sheep's milk										
soft and semi-soft										
made from raw or low heat-treated milk										
- at retail	Laboratório de Segurança Alimentar	batch	25g	105	1	10	0	103	1	1
- Surveillance - HACCP or own checks by industry	Lab.Viseu	batch	25g	2	0	2	0			
- at processing plant - domestic production (2)	LNIV	batch	25g	3	0	3		3		
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	7	0	7	0			
Dairy products (excluding cheeses)										
ice-cream										
- at retail - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	25g	5	0	5	0			
Cheeses, made from mixed milk from cows, sheep and/ or goats										
soft and semi-soft										
- Monitoring - official sampling	R.A.Açores	single	25g	90	3	90	3			
made from pasteurised milk										
- at processing plant - domestic production (3)	LNIV	batch	25g	1	0	1		1	0	
hard										
- Monitoring - official sampling	R.A.Açores	single	25g	48	0	48	0			

Cheeses, made from unspecified milk or other animal milk										
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	68	0	68	0			
Other processed food products and prepared dishes										
unspecified										
ready-to-eat foods										
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório do Algarve	single	10g	11	0	11	0			

(1) : Private Control
(2) : Private Control
(3) : Private Control

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for L.monocytogenes	Units tested with detection method	Listeria monocytogenes presence in x g	Units tested with enumeration method	> detection limit but <= 100 cfu/ g	L. monocytogenes > 100 cfu/ g
Meat from broilers (Gallus gallus)										
fresh	RAMADEI	single	25g	4	0	4	0			
meat products										
cooked, ready-to-eat										
- at retail	Laboratório de Segurança Alimentar	batch	25g	5	0			5		
Meat from pig										
meat products										
cooked, ready-to-eat										
- at retail	Laboratório de Segurança Alimentar	batch	25g	330	4	0		330		4
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	24	1	24	1			
Fish										
smoked										
- at retail	Laboratório de Segurança Alimentar	batch	25g	35	0			35		
Crustaceans										
unspecified										
cooked										
- at retail	Laboratório de Segurança Alimentar	batch	25g	25	0			25		
Other processed food products and prepared dishes										
unspecified										
ready-to-eat foods										
- at processing plant - Surveillance - HACCP or own checks by industry	Laboratório de Alcains	single	25g	6	0	6				

- at retail - Monitoring - official sampling	Laboratório de Segurança Alimentar	batch	25g	5	0			5		
Ready-to-eat salads										
- at retail - Monitoring - official sampling	Laboratório de Segurança Alimentar	batch	25g	165	0			165		

2.3.4. Listeria in animals

Table Listeria in animals

	Source of information	Sampling unit	Units tested	Total units positive for Listeria spp.	L. monocytogenes	Listeria spp., unspecified
Cattle (bovine animals)	LNIV	animal	12	2	2	
(*)	Lab.Viseu	animal	1	0		
Sheep	LNIV	animal	12	1	1	
(*)	Lab.Viseu	animal	4	0		
Goats	LNIV	animal	1	0		
(*)	Lab.Viseu	animal	7	1	1	
Pigs	Lab.Viseu	animal	3	0		
Gallus gallus (fowl)	Lab.Viseu	flock	16	0		
Solipeds, domestic						
horses						
- Clinical investigations	LNIV	animal	1	0		
Chinchillas						
pet animal						
- Clinical investigations	LNIV	animal	1	0		
Zoo animals, all						
- Clinical investigations	LNIV	animal	3	0		
Rabbits	Lab.Viseu	flock	9	0		

2.4. E. COLI INFECTIONS

2.4.1. General evaluation of the national situation

A. Verotoxigenic Escherichia coli infections general evaluation

Additional information

At LNIV the following procedures are performed in E. coli isolates of cattle, swine, sheep and goats (strains that are serotyped).
At poultry isolates, serotyping is not being done.
Diagnostic Techniques:
Internal method.
1 - Culture:
Platting in: Tryptose Blood Agar
MacConkey Agar
Minca Agar
To different E. coli colonies, the following biochemical reactions are done:
Simmons Citrate
MR-VP
Adonitol
Dulcitol
Inositol
Mannitol
Sorbitol
Glucose
Sucrose
Raffinose
Malonate
Urease
2 - Serology:
Serotyping by searching somatic (O) and capsular (K) antigens.
3 - Searching of enterotoxins:
- ST (by PCR)
- LT (by Biken test, CHO cells and PCR)
4 - Searching of citotoxins:
- in Vero and HeLa cells.
5 - Adesin detection:
- F5, F6, F41
6 - Antibiotic susceptibility testing

2.4.2. E. Coli Infections in humans

2.4.3. Escherichia coli, pathogenic in foodstuffs

2.4.4. Escherichia coli, pathogenic in animals

Table VT E. coli in animals

	Source of information	Sampling unit	Sample weight	Units tested	Verotoxigenic E. coli (VTEC)	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC non-O157	Verotoxigenic E. coli (VTEC) - VTEC, unspecified	Verotoxigenic E. coli (VTEC) - VTEC O139:K82
Cattle (bovine animals)	LNIV	animal		52	0				
Sheep									
(")	LNIV	animal		56	0				
Goats	LNIV	animal		54	1			1	
Pigs	LNIV	animal		115	5			1	4

2.5. TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1. General evaluation of the national situation

2.5.2. Tuberculosis, Mycobacterial Diseases in humans

2.5.3. Mycobacterium in animals

A. Mycobacterium bovis in bovine animals

Monitoring system

Sampling strategy

Tuberculosis testing is performed in all bovine, older than 6 weeks of age, using the intra-dermal comparative test.
The herds are classified and sampled according to Council Directive 64/ 432/ EEC and National Dec. Lei nº 272/ 2000, November 8th.

Frequency of the sampling

The herds are classified and sampled according to Council Directive 64/ 432/ EEC and National Dec. Lei nº 272/ 2000, November 8th.

Type of specimen taken

Other: intra-dermal comparative test, blood (gama-IFN), organs

Diagnostic/ analytical methods used

§ The National Reference Laboratory (NRL) is Laboratório Nacional de Investigação Veterinária (LNIV) which is also responsible for production and distribution of tuberculins.
Diagnostic techniques:
- Internal method.
- direct smear
- solid media: stonebrink and Lowenstein-Jensen.
- liquid media: bactec.

The classification of Mycobacterium is based on: BM techniques.
LNIV is responsible for the Mycobacterium isolation on the tuberculin reactors animals and others, following the procedures above mentioned.

Vaccination policy

Vaccination is forbidden.

Other preventive measures than vaccination in place

Pre-movement tests are mandatory for breeding animals.

Control program/ mechanisms

The control program/ strategies in place

An Eradication Plan for Bovine Tuberculosis is carried out and supervised by DGV.

Measures in case of the positive findings or single cases

- Herd under official restrictions;
- Isolation of suspected or infected animals in the herd;
- Positive animals compulsory slaughtered, under official supervision, with sample collection for laboratory diagnosis;
- Animal mouvements are forbiden from and to the herd;
- Desinfection of all premises, equipment and materials;
- Testing of all remaining animals;
- Thermic treatment of the milk.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium spp.	M. avium complex	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. intracellulare
Sheep	LNIV	animal	1	0					
Goats	LNIV	animal	4	3	1	1		1	
Pigs	LNIV	animal	54	11	9			2	
Zoo animals, all	LNIV	animal	4	0					
Wild boars	LNIV	animal	28	12	2	9		1	
Deer									
wild	LNIV	animal	73	40	1	37			2

Table Bovine tuberculosis - data on herds - Community co-financed eradication programmes

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
CONTINENTE	50683	47630	48814	70	54	5	7.143	102.486	0.143	0.111
Região Autónoma dos AÇORES	15919	3986	2267	1	1	0	0	56.874	0.044	0.044
Total	66602	51616	51081	71	55	5	7.042	98.963	0.139	0.108
Total - 1	74637	61790	57635	104	65	6	5.769	93.276	0.18	0.113

Table Bovine tuberculosis - data on animals - Community co-financed eradication programmes

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
CONTINENTE	1054546	968467	769587	769587	414	377	829	79.464	0.054
Região Autónoma dos AÇORES	257543	64388	52225	52225	39	21	21	81.11	0.075
Total	1312089	1032855	821812	821812	453	398	850	79.567	0.055
Total - 1	1308745	1001481	805333	805333	425	512	1584	80.414	0.053

Table Bovine tuberculosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Region	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							
	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
CONTINENTE	47630	968467	0	0	17	3265	207	11620	131	4191	0	0	50328	1035470
Região Autónoma dos AÇORES	3986	64388	0	0	1	17	0	0	3	51	0	0	15915	257475
Total	51616	1032855	0	0	18	3282	207	11620	134	4242	0	0	66243	1292945
Total - 1	61790	1001481	0	0	20	3178	291	11822	124	3989	0	0	74202	1289756

Table Bovine tuberculosis in countries and regions that do not receive Community co-financing for eradication programmes

Region	Total number of existing bovine		Officially free herds		Infected herds		Routine tuberculin testing		Number of tuberculin tests carried out before the introduction into the herds (Annex A(I)(2)(c) third indent (1) of Directive 64/ 432/ EEC)	Number of animals with suspicious lesions of tuberculosis examined and submitted to histopathological and bacteriological examinations	Number of animals detected positive in bacteriological examination
	Herds	Animals	Number of herds	%	Number of herds	%	Interval between routine tuberculin tests (*)	Number of animals tested			
Região Autónoma da MADEIRA	1524	5355	0	0	0	0	0	77	0	0	0
Total	1524	5355	0	0	0	0		77	0	0	0

(*) Legend:

In column "Interval between routine tuberculin tests" use the following numeric codes: (0) no routine tests; (1) tests once a year; (2) tests each two years; (3) tests each three years concerning 24 month-old animals; (4) tests each 4 years; (5) others (please give details).

2.6. BRUCELLOSIS

2.6.1. General evaluation of the national situation

A. Brucellosis general evaluation

Additional information

Foodstuffs
Brucella isolation:
- Samples are plated in 6 petri dishes of Farrel´s medium (3 incubated in CO2 atmosphere (CO2) and the others are incubated at normal atmosphere (N));
- Incubation at 37 degrees Celsius (+-1 degree celsius) for 10 days;
- 1st reading of the plates on the 4/ 5th day of incubation;
- 2nd reading on the 10th day of incubation;
- Suspected colonies are streaked on 2 agar slopes (one for (CO2) and the other for (N)for typing.

Brucella typing:
- Biochemical tests (urease, catalase and oxidase);
- CO2 requirement;
- H2S production;
- Dye sensitivity (Thionin, Basic Fucsin and Safrinin O);
- Agglutination with acriflavine and monospecific A and M antisera;
- Lysis by phages;
- Differentiation of vaccine and field strains.

For each set of plating and typing, reference strains are used.

2.6.2. Brucellosis in humans

2.6.3. Brucella in foodstuffs

Table Brucella in food

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. melitensis	B. abortus	B. suis	Brucella spp., unspecified
Milk, goats'								
raw (1)	LNIV	batch	1	1	1			
raw milk for manufacture								
intended for manufacture of raw or low heat-treated products (2)	LNIV	batch	2	0				
Milk, sheep's								
raw (3)	LNIV	batch	1	0				
Cheeses made from cows' milk								
soft and semi-soft								
made from pasteurised milk	LNIV	batch	2	0				
Cheeses made from goats' milk								
soft and semi-soft								
made from raw or low heat-treated milk (4)	LNIV	batch	2	0				
Cheeses made from sheep's milk								
soft and semi-soft (5)	LNIV	batch	6	0				

(1) : Private Control
(2) : Private Control
(3) : Private Control
(4) : Private Control
(5) : Private Control

2.6.4. Brucella in animals

A. Brucella abortus in bovine animals

Status as officially free of bovine brucellosis during the reporting year

Free regions

In the Açores, there are 4 islands (Graciosa, Pico, Flores and Corvo) that are Officially Bovine Brucellosis Free, according to Comission Decision 2002/ 588/ CE of the 11 July 2002.

Monitoring system

Sampling strategy

Serology is performed in cattle older than 12 months of age.
The herds are classified and sampled according to Council Directive 64/ 432/ EEC and Decreto-Lei nº244/ 2000 (Sep. 27th).

Frequency of the sampling

The herds are sampled according to Council Directive 64/ 432/ EEC and Decreto-Lei nº244/ 2000 (Sep. 27th) for cattle, sheep and goats.

Type of specimen taken

Other: Blood, milk, organs,vaginal mucus, semen,aborted foetus, placenta.

Diagnostic/ analytical methods used

The National Reference Laboratory is Laboratório Nacional de Investigação Veterinária (LNIV), which is responsible for production and distribution of the antigens and control sera used for serological testing, and supervision of the Regional Laboratories.
Diagnostic techniques:
Serology:
- Rose Bengal Test (RBT);
- Complement Fixation Test (CFT);
If RBT is positive CFT is performed.
Bacteriology - Samples from:
- live animals (milk, vaginal mucus, semen, aborted foetus, placenta;
- dead animals (lung, liver, spleen, lymph nodes, udder and uterus)
are plated in Farrel medium (Difco Tryptose Agar + SR209 Oxoid supplement + 5% horse serum).
- Biochemical reactions (urease, catalase and oxidase).
Typing of isolates:
- CO2 requirement;
- H2S production;
- Agglutination with monospecific antisera (anti-A, anti-M and anti-R or acriflavine test);
- Growth on dyes:
1/ 50.000 and 1/ 100.000 of basic fucsin

1/ 50.000 and 1/ 100.000 of thionin.
- Lysis by phages;
- Differentiation of vaccine and field strains.

Vaccination policy

Vaccination is forbidden but if an exceptional sanitary situation occurs, vaccination can be allowed with specific protocols between the National Veterinary Authority, the Regional Veterinary Authority and the owner(s) of the cattle.

Other preventive measures than vaccination in place

Pre-movement tests are mandatory for breeding animals.

Control program/ mechanisms

The control program/ strategies in place

An Eradication Plan for cattle is carried out and supervised by DGV.

Measures in case of the positive findings or single cases

Suspected Herd:
- Herd under oficial surveillance;
- Epidemiological questionaire;
- Animal mouvements are forbiden from and to the herd;
- Isolation of suspected animals in the herd;
- Sample collection for laboratory diagnosis.

Positive Herd:
- Herd under official restrictions;
- Compulsory slaughter of all positive animals, under official supervision with sample collection for laboratory diagnosis;
- Animal mouvements are forbiden from and to the herd;
- Serological control of all remaining animals;
- Thermic treatment of the milk.

Infected Herd:
- All mesures mencioned for positive herds;
- Desinfection of all premises, equipment and materials.

B. Brucella melitensis in sheep

Monitoring system

Sampling strategy

See Brucella melitensis in goats.

Type of specimen taken

Other: Blood, milk, organs,vaginal mucus, semen,aborted foetus, placenta.

Diagnostic/ analytical methods used

See Brucella melitensis in goats.

Vaccination policy

See Brucella melitensis in goats.

Control program/ mechanisms

The control program/ strategies in place

See Brucella melitensis in goats.

Measures in case of the positive findings or single cases

See Brucella melitensis in goats.

C. Brucella melitensis in goats

Status as officially free of caprine brucellosis during the reporting year

Free regions

Região Autónoma dos Açores is officially free of ovine and caprine brucellosis, according to Comission Decision 2003/ 44/ CE of the 17th January 2003.

Monitoring system

Sampling strategy

Serology is performed in sheep and goats older than 6 months of age.
The herds are classified and sampled according to Council Directive 64/ 432/ EEC and Decreto-Lei nº244/ 2000 (Sep. 27th) for sheep and goats.

Frequency of the sampling

The herds are classified and sampled according to Council Directive 64/ 432/ EEC and Decreto-Lei nº244/ 2000 (Sep. 27th) for sheep and goats

Type of specimen taken

Other: Blood, milk, organs,vaginal mucus, semen,aborted foetus, placenta.

Diagnostic/ analytical methods used

The National Reference Laboratory is Laboratório Nacional de Investigação Veterinária (LNIV), which is responsible for production and distribution of the antigens and control sera used for serological testing, and supervision of the Regional Laboratories.
Diagnostic techniques:
Serology:
Sheep and goats
Rose Bengal Test (RBT);

Complement Fixation Test (CFT).
Bacteriology - Samples from:
- live animals (milk, vaginal mucus, semen, aborted foetus, placenta);
- dead animals (lung, liver, spleen and lymph nodes)
are plated in Farrel medium (Difco Tryptose Agar + SR209 Oxoid supplement + 5% horse serum)
Biochemical reactions - urease, catalase and oxidase.
Typing of isolates:
- CO2 requirement;
- H2S production;
- Agglutination with monospecific antisera (anti-A, anti-M and anti-R);
- Growth on dyes:
1/ 50.000 and 1/ 100.000 of basic fucsin
1/ 50.000 and 1/ 100.000 of thionin.
- Lysis by phages;
- Differentiation of vaccine and field strains.

Vaccination policy

Vaccination of goats and sheeps with ReV1 is beeing done in some regions: In Entre-Douro e Minho, Beira Litoral, Beira Interior and Algarve only in young animals and in Trás-Os-Montes in adults and youngs.

Other preventive measures than vaccination in place

Pre-movement tests are mandatory for breeding animals and for the replacement in depopulated herds.

Control program/ mechanisms

The control program/ strategies in place

An Eradication Plan for sheep and goats, is carried out and supervised by DGV.

Measures in case of the positive findings or single cases

Suspected Herd:
- Herd under oficial surveillance;
- Epidemiological questionaire;
- Animal mouvements are forbiden from and to the herd;
- Isolation of suspected animals in the herd;
- Sample collection for laboratory diagnosis.
Positive Herd:
- Herd under official restrictions;
- Compulsory slaughter of all positive animals, under official supervision with sample collection for laboratory diagnosis;
- Animal mouvements are forbiden from and to the herd;
- Serological control of all remaining animals;
- Thermic treatment of the milk.
Infected Herd:
- All mesures mencioned for positive herds;

- Desinfection of all premises, equipment and materials.

Table Brucellosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Brucella spp.	B. melitensis	B. abortus	B. suis	Brucella spp., unspecified
Pigs	LNIV	animal	1	0				
- at farm	RA Açores	animal	9	0				
Zoo animals, all								
- in total - Clinical investigations	LNIV	animal	3	0				
Deer								
wild	LNIV	animal	192	0				
Wild boars								
wild	LNIV	animal	26	1			1	
Foxes								
wild	LNIV	animal	3	0				
Solipeds, domestic								
- at farm	R.A. Açores	animal	14	0				

Table Bovine brucellosis - data on herds - Community co-financed eradication programmes

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
CONTINENTE	50683	45533	44797	177	104	16	9.04	98.384	0.395	0.232
Região Autónoma dos AÇORES	15919	9709	9640	254	94	0	0	99.289	2.635	0.975
Total	66602	55242	54437	431	198	16	3.712	98.543	0.792	0.364
Total - 1	74637	62361	63944	639	246	19	2.973	102.538	0.999	0.385

Table Bovine brucellosis - data on animals - Community co-financed eradication programmes

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
Região Autónoma dos AÇORES	257543	144988	169586	169586	886	847	1449	116.966	0.522
CONTINENTE	1054546	798683	798657	798657	1083	1117	1717	99.997	0.136
Total	1312089	943671	968243	968243	1969	1964	3166	102.604	0.203
Total - 1									

Table Bovine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Region	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							
	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
CONTINENTE	45533	798683	0	0	63	6033	626	16767	199	6098	3280	35662	46515	989986
Região Autónoma dos AÇORES	9709	144988	0	0	50	846	68	1148	3	39	5977	90767	9821	164743
Total	55242	943671	0	0	113	6879	694	17915	202	6137	9257	126429	56336	1154729
Total - 1	62361	965891	0	0	200	7490	1095	26108	298	10884	13320	251406	59724	1012857

Table Bovine brucellosis in countries and regions that do not receive Community co-financing for eradication programme

Region	Total number of existing bovine		Officially free herds		Infected herds		Surveillance								Investigations of suspect cases							
							Serological tests				Examination of bulk milk samples				Information about abortions				Epidemiological investigation			
	Herds	Animals	Number of herds	%	Number of herds	%	Number of bovine herds tested	Number of animals tested	Number of infected herds tested		Number of bovine herds tested	Number of animals or pools tested	Number of infected herds		Number of notified abortions whatever cause	Number of isolations of Brucella infection	Number of abortions due to Brucella abortus	Number of animals tested with serological blood tests	Number of suspended herds	Number of positive animals		Number of animals examined microbio logically	Number of animals positive microbio logically
																				Serologically	BST		
Região Autónoma da MADEIRA	1524	5355	0	0	0	0	126	385	0		0	0	0		0	0	0	0	0	0	0	0	0
Total	1524	5355	0	0	0	0	126	385	0		0	0	0		0	0	0	0	0	0	0	0	0

Table Ovine or Caprine brucellosis - data on herds - Community co-financed eradication programmes

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
Região Autónoma dos AÇORES	3809	384	488	0	0	0	0	127.083	0	0
CONTINENTE	71025	71025	66625	1066	386	23	2.158	93.805	1.6	0.579
Total	74834	71409	67113	1066	386	23	2.158	93.984	1.588	0.575
Total - 1	70496	67341	67000	1507	506	27	1.792	99.494	2.249	0.755

Table Ovine or Caprine brucellosis - data on animals - Community co-financed eradication programmes

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
Região Autónoma dos AÇORES	13104	1290	3332	3332	0	0	0	258.295	0
CONTINENTE	2768810	2767392	2113075	2113075	11020	8874	11211	76.356	0.522
Total	2781914	2768682	2116407	2116407	11020	8874	11211	76.441	0.521
Total - 1	2864389	2794142	2135165	2135165	11457	9707	13234	76.416	0.537

Ovine or Caprine Brucellosis in countries and regions that do not receive Community co-financing for eradication programme

Region	Total number of existing ovine / caprine		Officially free herds		Infected herds		Surveillance			Investigations of suspect cases				
	Herds	Animals	Number of herds	%	Number of herds	%	Number of herds tested	Number of animals tested	Number of infected herds	Number of animals tested with serological blood tests	Number of animals positive serologically	Number of animals examined microbiologically	Number of animals positive microbiologically	Number of suspended herds
Região Autónoma da MADEIRA	289	4414	0	0	0	0	61	1627	0	0	0	0	0	0
Total	289	4414	0	0	0	0	61	1627	0	0	0	0	0	0

Table Ovine or Caprine brucellosis - data on status of herds at the end of the period - Community co-financed eradication programmes

Region	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							
	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals	Herds	Animals
CONTINENTE	71025	2767392	0	0	537	60839	4835	200244	1054	58396	5780	210067	58819	2239264
Região Autónoma dos AÇORES	384	1290	0	0	0	0	0	0	0	0	0	0	3809	13104
Total	71409	2768682	0	0	537	60839	4835	200244	1054	58396	5780	210067	62628	2252368
Total - 1	67341	2794142	0	0	766	90304	5836	278824	1194	79798	5920	263315	56780	2152148

2.7. YERSINIOSIS

2.7.1. General evaluation of the national situation

A. Yersinia enterocolitica general evaluation

Additional information

Diagnostic techniques:
Bacteriology: Internal method.
- Samples are plated on Yersinia CIN Agar, or Yersinia Selective Agar (Oxoid) supplemented with Yersinia Selective supplement (Oxoid).
- Biochemical reactions by API 20E strips or 32E.

2.7.2. Yersiniosis in humans

2.7.3. Yersinia in foodstuffs

2.7.4. Yersinia in animals

Table Yersinia in animals

	Source of information	Sampling unit	Units tested	Total units positive for Yersinia spp.	Y. pseudotuberculosis	Y. enterocolitica	Yersinia spp., unspecified	Y. enterocolitica - O:9	Y. enterocolitica - O:3	Y. enterocolitica - unspecified
Zoo animals, all										
- Clinical investigations	LNIV	animal	6	3	3					
Birds	LNIV	animal	3	0						
All animals										
unspecified	FMV	animal	2	2		2				

2.8. TRICHINELLOSIS

2.8.1. General evaluation of the national situation

2.8.2. Trichinellosis in humans

2.8.3. Trichinella in animals

A. Trichinella in pigs

Monitoring system

Sampling strategy

General

Priority given to wild boars, breeding animals and animals not raised under controlled housing conditions.

Type of specimen taken

General

Pigs: diaphragm pillars, tongue, masseter
Wild boars: tongue, diaphragm pillars, masseter

Methods of sampling (description of sampling techniques)

General

As determined in Comission Regulation (EC) N.º 2075/ 2005 of 5 December.

Case definition

General

Detection of one larvae of Trichinella.

Diagnostic/ analytical methods used

General

Mechanical digestion of pooled samples with magnetic stirrer (Comission Regulation (EC) N.º 2075/ 2005).

Notification system in place

Notifiable since 1953 by national law (Decreto-Lei nº 39209, de 14 de Maio).

Results of the investigation including description of the positive cases and the verification of the Trichinella species

All results negative.

Fattening pigs raised under controlled housing conditions in integrated production system

All results negative.

Fattening pigs not raised under controlled housing conditions in integrated production system

All results negative.

Breeding sows and boars

All results negative.

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

Cases of trichinelosis are not reported since < 1960.

Additional information

Special training in Trichinella detection on slaughterhouses and game activities is given to the meat inspection team.

B. Trichinella in horses

Monitoring system

Type of specimen taken

Tongue, masseter and diaphragm.

Case definition

Detection of one larvae of Trichinella.

Diagnostic/ analytical methods used

Mechanical digestion of pooled samples with magnetic stirrer (Comission Regulation (EC) N.º 2075/ 2005).

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total units positive for Trichinella spp.	T. spiralis	Trichinella spp., unspecified
Pigs	LNIV	animal	9	0		
fattening pigs						
raised under controlled housing conditions in integrated production system	RA MADEIRA	animal	27227	0		
- at slaughterhouse - animal sample - meat - Surveillance - official controls	R.A. Açores	animal	8517	0		
- at slaughterhouse - animal sample - meat - Surveillance - official controls (*)	DGV	animal	17188	0		
Wild boars						
wild	FMV	animal	3	0		
- at slaughterhouse - animal sample - meat - Surveillance - official controls	DGV	animal	447	0		
farmed	LNIV	animal	291	0		
Wolves						
wild	FMV	animal	6	0		

2.9. ECHINOCOCCOSIS

2.9.1. General evaluation of the national situation

A. Echinococcus spp. general evaluation

Additional information

§ Diagnostic techniques:
Direct examination test.
§ On 1996 a program supervised by DGV was implemented in Alentejo (DRAAAL) (approved by Decision 96/ 67/ CE). On 1998, besides Alentejo the same program was extended to Beira Interior (DRA BI).
The program was extended, in 2000, to the Algarve (DRAALG).
This program consisted on:
- deworming of all dogs present at rabies vaccination , by injection, performed by Municipality Veterinarians.
- deworming tablets were given for a further deworming, in 2-3 weeks time.
- deworming of dogs not present at rabies vaccination, but belonging to farms where sheep and goats with hidatidosis lesions were observed (the information of lesions in farm animals comes through the abattoir).
- educational actions have been taken place, close to people (dog owners and farmers).
The program is still in place in the 3 referred regions.

2.9.2. Echinococcosis in humans

2.9.3. Echinococcus in animals

Table Echinococcus in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Cattle (bovine animals)	LNIV	animal	15	5	5		
- at slaughterhouse (1)	R.A.Açores	animal	1	1			1
(*)	Laboratório de Alcains	animal	1	0			
- at slaughterhouse (*) (2)	DGV	animal	174817	7			7
Sheep	LNIV	animal	3	0			
(*)	Laboratório de Alcains	animal	29	3			3
Goats	LNIV	animal	1	0			
(*)	Laboratório de Alcains	animal	13	1			1
Pigs	LNIV	animal	1	0			
Dogs	LNIV	animal	1	0			
(*)	Laboratório de Alcains	animal	5	0			

(1) : Macroscopic examination
(2) : Macroscopic examination
Região Norte

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

A. Toxoplasmosis general evaluation

Additional information

Diagnostic techniques:
- Direct examination test.
- Serology - direct aglutination.
- PCR.

2.10.2. Toxoplasmosis in humans

2.10.3. Toxoplasma in animals

Table Toxoplasma in animals

	Source of information	Sampling unit	Units tested	Total units positive for Toxoplasma	T. gondii
Cattle (bovine animals)	LNIV	animal	10	0	
Sheep	LNIV	animal	61	31	31
Goats	LNIV	animal	39	5	5
Cats	LNIV	animal	6	2	2
Zoo animals, all	LNIV	animal	3	0	

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

Portugal is free from Rabies since 1961.
In August 1984, the national authorities detected a case of rabies in a 2 months old puppy that came from Maputo (Mozambique) and entered illegally in Portugal the10th August 1984. The animal was isolated and euthanized. The disease was confirmed by direct immunofluorescence the 31st August of 1984. The veterinary authorities implemented sanitary and prophylactic measures and since then, no further cases were detected and Portugal could maintain its free situation.

Additional information

By national law (Decreto-Lei nº314/ 2003, December the 17th and Portaria nº 81/ 2002, January the 24th), the annual dog rabies vaccination is compulsory.
Most of this vaccination is performed by the Municipality Veterinarians and the remaining by the small animal practitioners in their private clinics.
Since 1988, the National Veterinary Authority keeps collaboration with a National Laboratory: Instituto Bacteriológico Câmara Pestana, where foxes heads collected during the hunting period are analysed for Rabies and all the results have been found negative.

2.11.2. Lyssavirus (rabies) in animals

A. Rabies in dogs

Monitoring system

Case definition

Laboratorial confirmation (positive result at the direct immunofluorescence test).

Vaccination policy

By national law (Decreto-Lei nº314/ 2003, December the 17th and Portaria nº 81/ 2002, January the 24th), the annual dog rabies vaccination for animals older than 3 months is compulsory.

Other preventive measures than vaccination in place

The other preventive measures are included in the National Control programme.

Control program/ mechanisms

The control program/ strategies in place

The control Program is defined in the national law (Decreto Lei nº314/ 2003, December the 17th) and consists in Vaccination and Surveillance Measures for epidemiological survey with definition of specific rules for owners, for commercial purposes, for exhibits and for animal entrance in the country.

Measures in case of the positive findings or single cases

The measures are defined in the national and EU legislation.

Notification system in place

Rage is a national notifiable disease since 1953.

Additional information

In Portugal the annual rabies vaccination is compulsory since 1925.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	Unspecified Lyssavirus	European Bat Lyssavirus - unspecified	Classical rabies virus (genotype 1)
Dogs	RA MADEIRA	animal	10	0			
Cats	RA MADEIRA	animal	4	0			
Foxes							
wild	IBCP	animal	53	0			
Other carnivores							
wild							
(Mongoose)	IBCP	animal	2	0			

2.12. LEPTOSPIROSIS

2.12.1. General evaluation of the national situation

2.12.2. Leptospira in animals

Table Leptospira in animal

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Leptospira	Leptospira spp., unspecified
Cattle (bovine animals)	R.A. Açores	single		166	25	25
Pigs						
breeding animals						
- at farm - Monitoring	R.A. Açores	single		657	9	9

2.13. Q-FEVER

2.13.1. General evaluation of the national situation

A. Coxiella general evaluation

History of the disease and/ or infection in the country

*

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

*

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

*

Recent actions taken to control the zoonoses

*

Suggestions to the Community for the actions to be taken

*

Additional information

*

2.13.2. Coxiella (Q-fever) in animals

Table Coxiella burnetii (Q fever) in animals

	Source of information	Sampling unit	Units tested	Total units positive for Coxiella (Q-fever)	C. burnetii
Cattle (bovine animals)	LNIV	animal	147	6	6
Sheep	LNIV	animal	75	0	
Goats	LNIV	animal	24	5	5

2.14. ANISAKIOSIS

2.14.1. General evaluation of the national situation

2.14.2. Anisakis in foodstuffs

3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ENTEROCOCCUS, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

3.1.2. Antimicrobial resistance in Enterococcus, non-pathogenic isolates

3.2. ESCHERICHIA COLI, NON-PATHOGENIC

3.2.1. General evaluation of the national situation

3.2.2. Antimicrobial resistance in Escherichia coli, non-pathogenic isolates

Table Antimicrobial susceptibility testing of E. coli in All animals - unspecified (Canine,Feline,fishes,gallus gallus,rabits,sheep,psitacidae,cattle,pig) - quantitative data [Diffusion method]

	E. coli
	All animals - unspecified (Canine,Feline,fishes,gallus gallus,rabits,sheep,psitacidae,cattle,pig)
Isolates out of a monitoring programme	yes
Number of isolates available in the laboratory	31

Antimicrobials:	**Break point**	**N**	**n**	**Number of resistant isolates (n) and number of isolates with the concentration (u/ ml) or zone (mm) of inhibition equal to**																														
				<=6	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**>=35**
Aminoglycosides																																		
Gentamicin	12	31	3					2		1	2	2	1	4	8		10		1															
Kanamycin	13																																	
Neomycin	12																																	
Streptomycin	11	29	17	3	4		3	1	6		3		2	2	1		3		1															
Amphenicols																																		
Chloramphenicol	12	31	3			1		1		1		1	8	3		2		1	1	2	9		1											
Cephalosporins																																		
3rd generation cephalosporins	14	31	0															10	2	5	1	6	2	3	1			1						
Fluoroquinolones																																		
Ciprofloxacin	15	31	5								1	1	3		1				5	2	3	8	2	4	1									
Penicillins																																		
Ampicillin	13	27	17				3	1	10	1	2	1		1	2		1		2	1		2												
Quinolones																																		
Nalidixic acid	13	31	9			1	1	1	2	1	3		2		1	1	3	1	3	4	2	3	1	1										
Tetracyclines																																		
Tetracyclin	14	31	20					2		13		5		1			2	3	2		1	2												
Trimethoprim	10	31	13	3	1	5		4			3			3	5		6				1													

Table Antimicrobial susceptibility testing of E. coli in animals

n = Number of resistant isolates	E. coli							
	Cattle (bovine animals)		**Pigs**		**Gallus gallus (fowl)**		**Turkeys**	
Isolates out of a monitoring programme	no							
Number of isolates available in the laboratory	17							
Antimicrobials:	**N**	**n**	**N**	**n**	**N**	**n**	**N**	**n**
Aminoglycosides								
Streptomycin	17	8						
Cephalosporins								
Cefoperazone	17	2						
Penicillins								
Ampicillin	17	7						
Resistant to 3 antimicrobials	17	6						
Resistant to >4 antimicrobials	17	11						
Tetracyclines								
Tetracyclin	17	6						

Table Breakpoints used for antimicrobial susceptibility testing in Animals

Test Method Used

Disc diffusion

Standards used for testing

NCCLS

Escherichia coli, non-pathogenic	Standard for breakpoint	Breakpoint concentration (microg/ ml)			Range tested concentration (microg/ ml)		Disk content	Breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest	microg	Susceptible >=	Intermediate	Resistant <=
Amphenicols										
Chloramphenicol							30	18		12
Florfenicol										
Tetracyclines										
Tetracyclin							30	19		14
Fluoroquinolones										
Ciprofloxacin							5	21		15
Enrofloxacin										
Quinolones										
Nalidixic acid							30	19		13
Trimethoprim							25	16		10
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin							10	15	11	
Gentamicin										
Neomycin										
Kanamycin										
Trimethoprim + sulfonamides										
Cephalosporins										
3rd generation cephalosporins										
Cefoperazone										
Penicillins										
Ampicillin										

4. INFORMATION ON SPECIFIC MICROBIOLOGICAL AGENTS

4.1. HISTAMINE

4.1.1. General evaluation of the national situation

4.1.2. Histamine in foodstuffs

Table Histamine in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units in non- conformity	<= 100 mg/ kg	>100 - <= 200 mg/ kg	>200 - <= 400 mg/ kg	> 400 mg/ kg
Fish									
Fishery products from fish species associated with a high amount of histidine - not enzyme maturated	RAMADEIR	single		3	0	3			
Fishery products which have undergone enzyme maturation treatment in brine	RAMADEIR	single		1	0	1			

4.2. ENTEROBACTER SAKAZAKII

4.2.1. General evaluation of the national situation

4.2.2. Enterobacter sakazakii in foodstuffs

4.3. STAPHYLOCOCCAL ENTEROTOXINS

4.3.1. General evaluation of the national situation

4.3.2. Staphylococcal enterotoxins in foodstuffs

A. Staphylococcal enterotoxins in foodstuffs

Additional information

Analytical method:
Milk and dairy products - VIDAS SET2 (European screening method of CRL, Milk and Milk Products, version 3, 2006 May).
Other products - VIDAS SET2 (AOAC validation).

Table Staphylococcal enterotoxins in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Staphylococcal enterotoxins
Cheeses made from cows' milk					
soft and semi-soft					
made from pasteurised milk	LNIV	batch	25g	27	1
Cheeses made from goats' milk					
soft and semi-soft					
made from pasteurised milk	LNIV	batch	25g	18	0
Cheeses made from sheep's milk					
soft and semi-soft					
made from pasteurised milk	LNIV	batch	25g	11	0
Dairy products (excluding cheeses)	RAMADEIRA	single	10g	5	3
Cheeses, made from mixed milk from cows, sheep and/ or goats					
soft and semi-soft					
made from pasteurised milk	LNIV	batch	25g	11	0

Footnote

LNIV - Private Control

5. FOODBORNE OUTBREAKS

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

*

Description of the types of outbreaks covered by the reporting:

*

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

*

Relevance of the different causative agents, food categories and the agent/ food category combinations

*

Relevance of the different type of places of food production and preparation in outbreaks

*

Evaluation of the severity and clinical picture of the human cases

*

Descriptions of single outbreaks of special interest

*

Control measures or other actions taken to improve the situation

*

Suggestions to the community for the actions to be taken

*

Additional information

*

Foodborne Outbreaks: summarized data

	Total number of outbreaks	Number of possible outbreaks	Number of verified outbreaks
Bacillus	0	0	0
Campylobacter	0	0	0
Clostridium	0	0	0
Escherichia coli, pathogenic	0	0	0
Foodborne viruses	0	0	0
Listeria	0	0	0
Other agents	0	0	0
Parasites	0	0	0
Salmonella	0	0	0
Staphylococcus	0	0	0
Unknown	0	0	0
Yersinia	0	0	0