



FRANCE

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

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

including information on foodborne outbreaks and
antimicrobial resistance in zoonotic agents

IN 2005

INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **France**

Reporting Year: **2005**

Institutions and laboratories involved in reporting and monitoring:

Laboratory name	Description	Contribution
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PREFACE

This report is submitted to the European Commission in accordance with Article 9 of Council Directive 2003/99/EC¹. 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 France during the year 2005. 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.

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:

The sources of data are the "Central Service of the Statistical Surveys and Studies" and the "Food Safety Departement" of the French Ministry of Agriculture and Fisheries.

Dates the figures relate to and the content of the figures:

The numbers of livestock and holdings indicated in the table correspond to animals present at the time of 1 November 2005 for the bovine, ovine, caprine and porcine species. Sources are the "surveys on livestock", surveys imposed by the Community legislation, the overall results of which are forwarded to Eurostat.

For broilers, the information of livestock comes from the survey on the "structure of the farms", which also are a survey answering Community legislation and which take place in 2003, 2005 and 2007 between the two censuses of 2000 and 2010. The raised number of broilers corresponds to those counted the day of the passage of the investigator and not those of a homogeneous reference date.

The numbers of slaughtered animals and the detailed number of flocks of fowls, distributed according to the type of birds and the production sectors, are related to 2005. The numbers of slaughtered animals indicated in the table come from the "Central Service of the Statistical Surveys and Studies", whereas detailed numbers of fowl flocks come from the "Food Safety Departement".

Additional information

Further information is given in the "Central Service of the Statistical Surveys and Studies" web site: <http://www.agreste.agriculture.gouv.fr/>

Table Susceptible animal populations

* Only if different than current reporting year

Animal species	Category of animals	Number of herds or flocks		Number of holdings		Livestock numbers (live animals)		Number of slaughtered animals	
			Year*		Year*		Year*		Year*
Cattle (bovine animals)	calves (under 1 year)					5056200		1793300	
	in total			226800		18930400		5336300	
Deer	farmed - in total							5702	
Ducks	in total			52100	2003	23646000	2003	76134000	
Gallus gallus (fowl)	breeding flocks for egg production line - in total	209		111		1928000			
	breeding flocks for meat production line - in total	2194		821		17541000			
	laying hens (1)	5656		2897		78400000			
Geese	in total			18800	2003	764000	2003	461000	
Goats	animals under 1 year					358500		813300	
	animals over 1 year					893800		129600	
	milk goats			19400		858400			
Pigs	in total			20500		1252300		942900	
	fattening pigs					5780900		24917300	
	in total			44400		14761500		25682900	
Sheep	milk ewes			5400		1303700			
	animals under 1 year (lambs)					2780500		5743100	
	animals over 1 year					5979300		744700	
Turkeys	in total			74800		8759900		6487800	
	in total			17800	2003	35768000	2003	81376000	
Wild boars	farmed - in total							1241	

(1): (1): include flocks and holdings of pre-laying and laying hens producing eggs for packing sectors.

2. INFORMATION ON SPECIFIC ZOOSES AND ZONOTIC 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 is the most important bacterial foodborne infection in term of impact on morbidity and mortality in human in France. The monitoring of the number of cases of salmonellosis, by the CNR of Salmonellas, testifies to a fall of 33% between 1997 and 2003. A study carried out by Institut national de veille sanitaire in 2004 reports a link between the implementation of the national control programme of Salmonella in poultry and the decrease in the number of human salmonellosis cases due to S. Enteritidis and S. Typhimurium.

2.1.2. Salmonella in foodstuffs

2.1.3. 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)

In the frame of the national control programme of Salmonella in Gallus gallus, testing of breeder flocks is mandatory. Sampling programme, including the type and the number of samples and the frequency of sampling, is specified in legal texts transposing the directive 92/117/EEC.

All the breeding flocks with more than 250 birds are tested for S. Enteritidis and S. Typhimurium.

Laying hens flocks

In the frame of the national control programme of Salmonella in Gallus gallus, testing of pre-laying flocks and laying hens flocks is mandatory. Sampling programme, including the type and the number of samples and the frequency of sampling, is specified in legal texts covering the production generation flocks in table egg sector.

All the pre-laying flocks with more than 250 birds are tested for S. Enteritidis and S. Typhimurium. All the laying hens flocks, commercialising eggs through an egg packing centre, are tested for S. Enteritidis.

Frequency of the sampling

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

Every flock is sampled

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

2 weeks prior to moving

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

Every 2nd: each flock is tested on the farm months

Laying hens: Day-old chicks

Every flock is sampled

Laying hens: Rearing period

2 weeks prior to slaughter

Laying hens: Production period

At the age of 24, 40 and 55 weeks

Type of specimen taken

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

Meconium

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

Other: 60 caecal samples and 1 environmental gauze swab

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

Other: Every 2nd week at the hatchery: 5 hatching cabinet crate linings and Every 8th week on the farm: 60 caecal samples and 1 environmental gauze swab

Laying hens: Day-old chicks

Internal linings of delivery boxes

Laying hens: Rearing period

Other: 2 pairs of socks and 1 environmental dust swab

Laying hens: Production period

Other: (60 caecal droppings or 2 equivalent faecal samples (swabs or socks)) and (1 environmental dust swab)

Case definition

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

A flock is suspected of infection when *S. Enteritidis* or *S. Typhimurium* is isolated. Suspicion is immediately investigated by means of official samples (taken by the veterinary services) in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

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

necessary): Rearing period

A flock is suspected of infection when *S. Enteritidis* or *S. Typhimurium* is isolated. Suspicion is immediately investigate by means of official samples (taken by the veterinary services)in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

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

A flock is suspected of infection when *S. Enteritidis* or *S. Typhimurium* is isolated. Suspicion is immediately investigate by means of official samples (taken by the veterinary services)in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

Laying hens: Day-old chicks

A flock is suspected of infection when *S. Enteritidis* or *S. Typhimurium* is isolated. Suspicion is immediately investigate by means of official samples (taken by the veterinary services)in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

Laying hens: Rearing period

A flock is suspected of infection when *S. Enteritidis* or *S. Typhimurium* is isolated. Suspicion is immediately investigate by means of official samples (taken by the veterinary services)in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

Laying hens: Production period

A flock is suspected of infection when *S. Enteritidis* is isolated. Suspicion is immediately investigate by means of official samples (taken by the veterinary services)in order to confirm the infection. Suspicion of infection may be lifted only after two successive official samples testing negative.

Diagnostic/analytical methods used

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

Other: AFNOR NF U 47 100 and 47 101

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

Other: AFNOR NF U 47 100 and 47 101

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

Other: AFNOR NF U 47 100 and 47 101

Laying hens: Day-old chicks

Other: AFNOR NF U 47 100 and 47 101

Laying hens: Rearing period

Other: AFNOR NF U 47 100 and 47 101

Laying hens: Production period

Other: AFNOR NF U 47 100 and 47 101

Vaccination policy

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

Vaccination of breeding flocks of the table egg sector is forbidden. Vaccination of breeding flocks of meat egg sector is authorized with killed vaccines only.

Laying hens flocks

Vaccination of laying hens flocks is authorized with killed vaccines only.

Other preventive measures than vaccination in place

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

Legal texts specify the preventive rules (hygienic and biosecurity measures) which should be observed to diminish the risk for Salmonella infection in flocks. Receiving compensation by the government in case of infection confirmed is subject to the respect of the hygienic rules.

Laying hens flocks

Legal texts specify the preventive rules (hygienic and biosecurity measures) which should be observed to diminish the risk for Salmonella infection in flocks. Receiving compensation by the government in case of infection confirmed is subject to the respect of the hygienic rules.

Measures in case of the positive findings or single cases

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

When Salmonella infection is suspected in breeding flock, official restrictions are immediately imposed by the Vet. services, including a prohibition of moving any bird to or

from the holding except for destruction. No eggs may be transported from the holding. Epidemiological investigations are carried out to trace the source and the putative spreading of infection. Official samples are taken in all the poultry houses on the farm concerned.

When Salmonella infection is confirmed in breeding flock, the following measures shall be taken:

- breeders may leave the holding for sanitary slaughter only under supervision of the veterinary services;
- hatching-eggs from the infected flock are destroyed;
- the poultry house or hatchery must be cleaned and disinfected under supervision of the Vet. services;
- environmental samples are taken after cleaning and disinfection to test the result of the cleaning and disinfection procedure;
- Further measures are taken to investigate the source of infection and to eliminate the occurrence of rodents, birds and insects.

Laying hens flocks

When Salmonella infection is suspected in breeding flock, official restrictions are immediately imposed by the Vet. services, including a prohibition of moving any bird to or from the holding except for destruction. No table eggs may be transported from the holding. Epidemiological investigations are carried out to trace the source and the putative spreading of infection. Official samples are taken in all the poultry houses on the farm concerned.

When Salmonella infection is confirmed in breeding flock, the following measures shall be taken:

- laying hens may leave the holding for sanitary slaughter only under supervision of the veterinary services;
- eggs are heat treated;
- the poultry house or hatchery must be cleaned and disinfected under supervision of the Vet. services;
- environmental samples are taken after cleaning and disinfection to test the result of the cleaning and disinfection procedure;
- Further measures are taken to investigate the source of infection and to eliminate the occurrence of rodents, birds and insects.

Notification system in place

Farmers, veterinarians and laboratories have to notify to the LCA (Director of Veterinary Services) isolation of *S. Enteritidis* or *S. Typhimurium* from any samples (mandatory samples or self-samples).

Results of the investigation

Cf. Table

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

Elite and GP flocks are free of Salmonella. Parent flocks of egg sector are free of *S. Enteritidis*

and S. Typhimurium. Parent flocks of meat sector are practically free of S. Enteritidis and S. Typhimurium.

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)

Cf. Breeding flocks for egg production.

Table Salmonella in breeding flocks of Gallus gallus

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl)							
grandparent breeding flocks for egg production line (1)	CCA	Flock	45	0			
parent breeding flocks for egg production line							
during rearing period	CCA	Flock	66	0			
during production period	CCA	Flock	98	0			
grandparent breeding flocks for meat production line	CCA	Flock	361	0			
parent breeding flocks for meat production line							
during rearing period	CCA	Flock	877	0			
during production period	CCA	Flock	956	7	6	1	

(1) : Including also Elite flocks.

Table Salmonella in other poultry

	Source of information	Sampling unit	Units tested	Total units positive for Salmonella	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Gallus gallus (fowl)							
laying hens							
during rearing period	CCA	Flock	2248	18	10	8	
during production period	CCA	Flock	3208	72			

2.1.4. 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	S. Enteritidis	S. Typhimurium	Salmonella spp., unspecified
Feed material of marine animal origin								
fish meal	CCA	single	1kg	49	0			

Table Salmonella in compound feedingstuffs

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Salmonella	S. Typhimurium	S. Enteritidis	Salmonella spp., unspecified
Compound feedingstuffs for cattle								
final product	CCA	single	1kg	8	0			
Compound feedingstuffs for pigs								
final product	CCA	single	1kg	6	0			
Compound feedingstuffs for fish								
final product	CCA	single	1kg	5	0			

2.1.5. Salmonella serovars and phagetype distribution

2.1.6. Antimicrobial resistance in Salmonella isolates

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.

A. Antimicrobial resistance in Salmonella in poultry

Sampling strategy used in monitoring

Frequency of the sampling

A passive monitoring programme of antimicrobial resistance in Salmonella enterica, named "Salmonella network" is organised. The Salmonella network is a monocentric one designed for general monitoring of strains which are collected with relative epidemiological data from veterinary laboratories. Serotyping and antibioresistance are commonly performed on isolates collected.

In 2004, 151 private or public laboratories, based on a volunteer participation, provided the data collected by this Salmonella network:

- 14725 data were collected by the network,
- 4903 strains collected have been serotyped by Afssa-LERQAP and 9822 were serotypes by the partners laboratories
- Among the 4903 collected strains, 3403 independent isolates has been tested for antimicrobial resistance.

The Salmonella strains are isolated from 3 different sectors: (i) rearing or wild animals and their environment, (ii) all along the food hygiene chain or (iii) from the natural ecosystem.

Type of specimen taken

The Salmonella strains are isolated from rearing animals and their environment in poultry, cattle and pig sector.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Susceptibility to beta-lactams, aminoglycosides, quinolones, chloramphenicol, tetracyclines, and sulphamethoxazole-trimethoprim is studied using a standard disk diffusion method on Mueller-Hinton agar plates (Bio-Rad, Marne la coquette, France).

Breakpoints used in testing

The panel of antibiotics tested (load, breakpoints (mm)) was recommended by the "Comité de l'Antibiogramme de la Société Française de Microbiologie" (CA-SFM) :

ampicillin (10 µg, 19-14), amoxicillin + clavulanic acid (20 µg, 21-14), cephalothin (30 µg, 18-12), cefotaxime (30 µg, 21-15), ceftazidime (30 µg, 21-15), streptomycin (10 IU, 15-13), gentamicin (10 IU, 16-14), kanamycin (30 IU, 17-15), chloramphenicol (30 µg, 23-19), tetracycline (30 IU, 19-17), sulfamethoxazole-trimethoprim (23.75 µg + 1.25 µg, 16-10), sulphonamides (200 µg, 17-12), nalidixic acid (30 µg, 20-15), ofloxacin (5 µg, 22-16), enrofloxacin (5 µg, 22-17) and colistin (50 µg, 15). Zone diameters were read using the automated scanner Osiris (BioRad).

B. Antimicrobial resistance in Salmonella in foodstuff derived from poultry

Sampling strategy used in monitoring

Frequency of the sampling

A passive monitoring programme of antimicrobial resistance in *Salmonella enterica*, named "Salmonella network" is organised. The Salmonella network is a monocentric one designed for general monitoring of strains which are collected with relative epidemiological data from veterinary laboratories. Serotyping and antibioresistance are commonly performed on isolates collected.

In 2004, 151 private or public laboratories, based on a volunteer participation, provided the data collected by this Salmonella network:

- 14725 data were collected by the network,
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- Among the 4903 collected strains, 3403 independent isolates has been tested for antimicrobial resistance.

The Salmonella strains are isolated from 3 different sectors: (i) rearing or wild animals and their environment, (ii) all along the food hygiene chain or (iii) from the natural ecosystem.

Type of specimen taken

The Salmonella strains are isolated from the food hygiene chain in poultry, pigs and cattle sectors.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Susceptibility to beta-lactams, aminoglycosides, quinolones, chloramphenicol, tetracyclines, and sulphamethoxazole-trimethoprim is studied using a standard disk diffusion method on Mueller-Hinton agar plates (Bio-Rad, Marne la coquette, France).

Breakpoints used in testing

The panel of antibiotics tested (load, breakpoints (mm)) was recommended by the "Comité de l'Antibiogramme de la Société Française de Microbiologie" (CA-SFM) : ampicillin (10 µg, 19-14), amoxicillin + clavulanic acid (20 µg, 21-14), cephalothin (30 µg, 18-12), cefotaxime (30 µg, 21-15), ceftazidime (30 µg, 21-15), streptomycin (10 IU, 15-13), gentamicin (10 IU, 16-14), kanamycin (30 IU, 17-15), chloramphenicol (30 µg,

23-19), tetracycline (30 IU, 19-17), sulfamethoxazole-trimethoprim (23.75 µg + 1.25 µg, 16-10), sulphonamides (200 µg, 17-12), nalidixic acid (30 µg, 20-15), ofloxacin (5 µg, 22-16), enrofloxacin (5 µg, 22-17) and colistin (50 µg, 15). Zone diameters were read using the automated scanner Osiris (BioRad).

2.2. CAMPYLOBACTERIOSIS

2.2.1. General evaluation of the national situation

2.2.2. Campylobacter, thermophilic in foodstuffs

A. Thermophilic Campylobacter in Broiler meat and products thereof

Monitoring system

Sampling strategy

At slaughterhouse and cutting plant

A monitoring plan of Campylobacter in broiler carcasses was carried out during April and Novembre 2004. 142 Randomly selected batches were sampled throughout the period by the veterinary services. The random selection is stratified upon the production of the slaughterhouses included in the plan.

Frequency of the sampling

At slaughterhouse and cutting plant

Sampling takes place during the months from April to Novembre

Type of specimen taken

At slaughterhouse and cutting plant

Other: neck skin

Methods of sampling (description of sampling techniques)

At slaughterhouse and cutting plant

For each batch, 10g of neck skin from each of the 5 different carcasses sampled per batch(5*10g per batch) were taken and pooled to check for Campylobacter spp. Sampling was carried out after refrigeration. Each isolate was identified as C. jejuni or Campylobacter spp.

Definition of positive finding

At slaughterhouse and cutting plant

A batch was considered positive when samples tested positive for Campylobacter spp.

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. jejuni	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Meat from broilers (Gallus gallus) (1)	monitoring programme	chicken neck skin	10g	142	94	42		55		

(1) : More than species of Campylobacter genus may be isolated from a positive sample

2.2.3. Campylobacter, thermophilic in animals

A. Thermophilic Campylobacter in Gallus gallus

Monitoring system

Sampling strategy

A programme monitors the prevalence and the antibiotic resistance of Campylobacter spp. from healthy broilers slaughtered. It is an active programme based on a random selection of healthy animals at the slaughterhouses. At least 150 samples from 150 different flocks randomly selected are tested per year. The random selection is stratified on the annual production of slaughter.

Frequency of the sampling

At slaughter

Sampling distributed evenly throughout the year

Type of specimen taken

At slaughter

Other: caecal content

Methods of sampling (description of sampling techniques)

At slaughter

Samples are performed in 10 slaughterhouses by veterinary services previously trained. One caecal sample from one animal per flock or batch is taken. On each sample of caecal content tested positive, one strain of Campylobacter is isolated.

Diagnostic/analytical methods used

At slaughter

PCR Multiplex PCR

Table Campylobacter in animals

	Source of information	Sampling unit	Units tested	Total units positive for Campylobacter, thermophilic	C. jejuni	C. coli	C. lari	C. upsaliensis	thermophilic Campylobacter spp., unspecified
Gallus gallus (fowl)									
broilers									
- at slaughterhouse	monitoring amr	1 caeca	142	121	32	74			

2.2.4. Antimicrobial resistance in Campylobacter, thermophilic isolates

A. Antimicrobial resistance in Campylobacter jejuni and coli in poultry

Sampling strategy used in monitoring

Frequency of the sampling

A programme monitors the prevalence and the antibiotic resistance of Campylobacter spp. from healthy broilers slaughtered. It is an active programme based on a random selection of healthy animals at the slaughterhouses. At least 150 samples from 150 different flocks randomly selected are tested per year. The random selection is stratified on the annual production of slaughter. Sampling at slaughter is distributed evenly throughout the year.

Type of specimen taken

One caecal sample from one animal per flock or batch is taken.

Methods of sampling (description of sampling techniques)

Samples are performed at 10 slaughterhouses by veterinary services previously trained.

Procedures for the selection of isolates for antimicrobial testing

On each sample of caecal content positive for Campylobacter, one strain isolated is randomly selected and submitted to antibiotic susceptibility determination.

Laboratory methodology used for identification of the microbial isolates

The presence of the absence of Campylobacter in each sample is tested by selective enrichment in Preston broth. Plating on Karmali and virion is then performed. Agar plates were incubated at 42°C for 48hours in microaerophilic conditions. One Campylobacter colony per sample (when present)is randomly selected for genetic typing and antibiotic susceptibility determination.

Laboratory used for detection for resistance

Antimicrobials included in monitoring

Agar dilution method is used for Campylobacter. (Cf. Table)

Breakpoints used in testing

Breakpoints used are, as in other programmes, those from the CA-SFM: antibiogramme committee of the French society for Microbiology. (Cf. Table).

Table Antimicrobial susceptibility testing of C. coli in Pigs - fattening pigs - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to																						
C. coli																						
Pigs - fattening pigs - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																						
Isolates out of a monitoring programme																						
yes																						
Number of isolates available in the laboratory																						
67																						
Antimicrobials:	N	≥ 0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines	67	41		10	5	4	3	0	1	3	3	12	13	13								
Fluoroquinolones																						
Ciprofloxacin	67	18	3	5	7	6	10	6	1	6	3	1	7									
Quinolones																						
Nalidixic acid	67	31				1	3	1	4	8	19	14	7	10								
Aminoglycosides																						
Gentamicin	67	0	5	3	8	9	38	2	2													
Macrolides																						
Erythromycin	67	29			10	7	4	7	10	4	0	1	24									
Penicillins																						
Ampicillin	67	29			2	9	12	15	7	6	11	1	4									

Table Antimicrobial susceptibility testing of C. coli in broilers - Gallus gallus (fowl) - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to		C. coli																				
Gallus gallus (fowl) - broilers - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																						
Isolates out of a monitoring programme	yes																					
	74																					
Number of isolates available in the laboratory																						
Antimicrobials:	N	≥0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines	74	53		2	5	3	1	7	0	3	8	8	17	20								
Fluoroquinolones																						
Ciprofloxacin	74	24	2	9	9	9	10	2	4	5	4	11										
Quinolones																						
Nalidixic acid	74	40					3	7	4	14	6	9	14	8	9							
Aminoglycosides																						
Gentamicin	74	0	1	3	1	8	12	2	2													
Macrolides																						
Erythromycin	74	13			6	9	15	16	15	2	0	0	11									
Penicillins																						
Ampicillin	74	18			2	2	4	17	10	19	2	3	15									

Table Antimicrobial susceptibility testing of C. jejuni in broilers - Gallus gallus (fowl) - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to		C. jejuni																				
Gallus gallus (fowl) - broilers - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																						
Isolates out of a monitoring programme	yes																					
Number of isolates available in the laboratory	32																					
Antimicrobials:	N	≥0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines	32	13		8	4	1	3	2	0	1	3	4	1	5								
Fluoroquinolones	32																					
Ciprofloxacin	32	3	5	3	2	5	8	1	0	0	2	1										
Quinolones	32																					
Nalidixic acid	32	9					8	3	1	4	7	1	2	3	3							
Aminoglycosides	32																					
Gentamicin	32	0	5	3	3	9	6	2	1													
Macrolides	32																					
Erythromycin	32	0			11	6	8	5	2													
Penicillins	32																					
Ampicillin	32	9			8	1	1	1	9	2	1	3	6									

Table Breakpoints used for antimicrobial susceptibility testing of Campylobacter in Animals

Test Method Used

Disc diffusion
Agar dilution
Broth dilution
E-test

Standards used for testing

CA_SFM

Campylobacter, thermophilic	Standard for breakpoint	Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		disk content microg	breakpoint Zone diameter (mm)		
		Susceptible ≤	Intermediate	Resistant >	lowest	highest		Susceptible ≥	Intermediate	Resistant ≤
Tetracyclines	CA SFM	4	8	8	0.125	128				
Amphenicols										
Chloramphenicol										
Florfenicol										
Fluoroquinolones										
Ciprofloxacin	CA SFM	1	2	2	0.03	32				
Enrofloxacin										
Quinolones										
Nalidixic acid	CA SFM	8	16	16	1	256				
Trimethoprim										
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin										
Gentamicin	CA SFM	4	8	8	0.03	16				
Neomycin										
Kanamycin										
Macrolides										
Erythromycin	CA SFM	1	2-4	4	0.25	64				
Trimethoprim + sulfonamides										
Cephalosporins										
3rd generation cephalosporins										
Penicillins										
Ampicillin	CA SFM	4	8-16	16	0.25	64				

Table Breakpoints used for antimicrobial susceptibility testing of Campylobacter in Food

Test Method Used

Disc diffusion
Agar dilution
Broth dilution
E-test

Standards used for testing

CA_SFM

Campylobacter, thermophilic	Standard for breakpoint	Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		disk content microg	breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest		Susceptible >=	Intermediate	Resistant <=
Tetracyclines	CA SFM	4	8	8	0.125	128				
Amphenicols										
Chloramphenicol										
Florfenicol										
Fluoroquinolones										
Ciprofloxacin	CA SFM	1	2	2	0.03	32				
Enrofloxacin										
Quinolones										
Nalidixic acid	CA SFM	8	16	16	1	256				
Trimethoprim										
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin										
Gentamicin	CA SFM	4	8	8	0.03	16				
Neomycin										
Kanamycin										
Macrolides										
Erythromycin	CA SFM	1	2-4	4	0.25	64				
Trimethoprim + sulfonamides										
Cephalosporins										
3rd generation cephalosporins										
Penicillins										
Ampicillin	CA SFM	4	8-16	16	0.25	64				

2.3. LISTERIOSIS

2.3.1. General evaluation of the national situation

2.3.2. Listeria in foodstuffs

Table Listeria monocytogenes in other foods

	Source of information	Sampling unit	Sample weight	Definition used	Units tested	=<100 cfu/g	>100 cfu/g	Total units positive for L.monocytogenes	Listeria monocytogenes presence in x g
Meat from pig meat products									
cooked, ready-to-eat (1)	DGAL	batch	5*25g		34	3	1	4	4
Crustaceans unspecified									
cooked (2)	A3C	batch	25g		1163	33	0	33	33
Other processed food products and prepared dishes									
unspecified non-ready-to-eat foods									
- at retail - domestic production - Monitoring - official sampling - objective sampling (3)		batch	5*25g		55	27	0	27	27

(1) : All samples were tested at use-by date or use-by date plus two days. Among the 4 positive units, 3 units were positive for L. monocytogenes with less than 10 cfu/g.

(2) : Among the 33 positive units, 31 units were positive for L. monocytogenes with less than 10 cfu/g.

(3) : All samples were tested at use-by date or use-by date plus two days. Among the 27 positive units, 16 units were positive for L. monocytogenes with less than 10 cfu/g.

2.3.3. Listeria in animals

2.4. E. COLI INFECTIONS

2.4.1. General evaluation of the national situation

2.4.2. Escherichia coli, pathogenic in foodstuffs

Table VT E.coli in food

	Source of information	Sampling unit	Sample weight	Units tested	Total units positive for Escherichia coli, pathogenic	E. coli spp., unspecified	Verotoxigenic E. coli (VTEC) - VTEC O157	Verotoxigenic E. coli (VTEC) - VTEC O157:H7
Cheeses made from goats' milk								
unspecified								
made from raw or low heat-treated milk								
- at processing plant - domestic production - Monitoring - monitoring survey - objective sampling	DGAL	batch		871	0			0

2.4.3. Escherichia coli, pathogenic in animals

2.5. TUBERCULOSIS, MYCOBACTERIAL DISEASES

2.5.1. General evaluation of the national situation

2.5.2. Mycobacterium in animals

A. Mycobacterium bovis in Bovine Animals

Status as officially free of bovine tuberculosis during the reporting year

The entire country free

France is recognised officially tuberculosis free (OTF) since December 2000 in accordance with the Community legislation (decision CE/2003/467).

Monitoring system

Sampling strategy

Infection with *M. bovis* or *M. tuberculosis* is notifiable under the veterinary public health legislation in all animal mammal species. The TB testing programme applied in France follows the principles of Council Directive 64/432/EEC, last amended on 8 July 2002 by Commission Regulation 1226/2002. All animals slaughtered for human consumption are officially inspected post-mortem by a veterinarian. Suspicious lesions are sampled for histological and bacteriological examination.

Frequency of the sampling

The frequency of the skin-testing depends on the geographical location of herds and area history excepted for herds considered at risk and for moving animals.

Compulsory tuberculin testing of cattle herds takes place every one to five years according to the proportion of herds in a specific area (département) sustaining a confirmed TB breakdown over the previous years. At the end of 2005, regular skin testing has been stopped in 50 "départements". The testing frequency is every five years in 1 "département", every four years in 5 "départements", every three years in 21 "départements", every two years in 14 "départements" and annual in 5 "départements". TB testing intervals are reviewed nationally once a year, for compliance with 64/432/EEC.

Furthermore, individual herds situated in 1-, 2-, 3- and 4-yearly testing areas are subjected to annual testing if they represent a high public or animal health risk (e.g. herds infected less than 10 years ago). Animals moving from a herd to another are also individually skin tested whenever the herd of origine is considered at risk.

The programme of regular tuberculin herd testing is supplemented by veterinary inspection of cattle during routine meat production at slaughterhouses. Animals with suspect tuberculous lesions (granulomas) are traced back to the herd of origin, which is then subjected to tuberculin check testing.

Case definition

A case is an animal:

- from which *M. bovis* or *M. tuberculosis* has been isolated,
- with a positive result to a comparative skin test and with tuberculosis evoking histopathological lesions,
- with a positive result to a comparative skin test and with isolation of mycobacterias from tuberculosis group,
- with a positive result to any test and belonging to an infected herd.

Diagnostic/analytical methods used

- Single intra-dermal skin test used for routine testing,
- Comparative intra-dermal skin test,
- Inspection of carcasses at slaughterhouses,
- Histological examination,
- Bacteriological examination,
- Gamma interferon test.

Control program/mechanisms

The control program/strategies in place

In 1963, at the time of the implementation of the national control programme, the aim was the fight against tuberculosis, and consequently testing herds. Since 2003, the priority is given to the protection of the free herds, which corresponds better to the situation currently met in France, a situation of end of prophylaxis and very low prevalence.

The epidemiological unit of the programme is the herd. The program takes into account the diversity of the epidemiological cycles by the inclusion of the Bovinae (*Bos taurus*, *Bos indicus*, *Bison bison*, *Bison bonasus* and *Bubalus bubalus*) and of the Capra.

The testing of tuberculous animals in herds is founded on the clinical or allergic diagnosis of the disease. The diagnosis of certainty is based on the bacteriological isolation of *M. bovis* and *M. tuberculosis*. The frequency of herd testings can be reduced in certain départements if the annual prevalence rate of cattle herds infected is particularly low. The monitoring system is centred on the herds at risk. The bovine herds tested negative are qualified "officially tuberculosis free".

The reduction of the frequency of tuberculin-test is combined with the control of the risks of infection of herds. Whenever a new herd is created, the tests of tuberculosis qualification are carried out. The free status is also subject to the respect of the preventive measures against the risks related to the introduction of an animal.

Measures in case of the positive findings or single cases

In case of isolation of *M. bovis* or *M. tuberculosis* from cattle, the herd of origin is considered as infected. Total depopulation of this herd is compulsory.

Results of the investigation

In 2005, more than 264 000 herds, housing more than 19.5 million bovines were covered by the French programme of prophylaxis against bovine tuberculosis (Cf. Table 2.6).

The geographical distribution of the outbreaks of bovine tuberculosis on the last years shows

that the residual outbreaks are located mainly in the south of the country.

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

The annual herd prevalence rate, which was 0.9% in 1984, decreased to 0.03% in 2005. The annual herd incidence rate, which was 0.16% in 1992, decreased to 0.02% in 2005.

The downward trend of the annual herd rates of prevalence and incidence confirms the favorable evolution of the situation.

Table Tuberculosis in other animals

	Source of information	Sampling unit	Units tested	Total units positive for Mycobacterium	M. bovis	M. tuberculosis	Mycobacterium spp., unspecified	M. avium complex
Pigs		animal	23	23				
Badgers		animal	1	0				

Table Bovine tuberculosis 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		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			
FRANCE	264131	19591609	264043	99.97	88	0.03		980000	230000	193	58
Total	264131	19591609	264043	99.97	88	0.03	0	980000	230000	193	58

Footnote

Interval between routine tuberculin tests are performed according to the département: (a) in 50 départements, no routine tests are performed; (b) in 5 départements, tests are carried out once a year; (c) in 14 départements, tests are carried out every two years; (d) in 13 départements, tests are performed every three years concerning 24 month-old animals; (e) in 8 départements, tests are carried out every three years; %

2.6. BRUCELLOSIS

2.6.1. General evaluation of the national situation

2.6.2. Brucella in foodstuffs

2.6.3. Brucella in animals

A. Brucella abortus in Bovine Animals

Status as officially free of bovine brucellosis during the reporting year

The entire country free

France is officially brucellosis free (OBF) since Septembre 2005 in accordance with the Community legislation (decision CE/2003/467).

Monitoring system

Sampling strategy

Bovine brucellosis is a notifiable disease under the domestic animal health legislation. All abortions are required to be notified. Aborting animals and abortion material are sampled and tested both serologically and bacteriologically.

The epidemiological unit of the monitoring system is the herd. Before September 2005, herds were monitored either by an annual serological testing of animals more than 12 months old, or by bulk milk testing (Ring-Test or ELISA test) four times per year. Since September 2005, herds are monitored either by an annual serological testing of 20 % animals more than 24 months old, or by bulk milk testing (Ring-Test or ELISA test) once a year. Furthermore, brucellin skin tests are performed in herds where reactors are suspected as false positive.

Frequency of the sampling

As described under sampling strategy.

Methods of sampling (description of sampling techniques)

Blood, milk and organ/tissues are sampled as appropriate (see sampling strategy).

Case definition

A case is an animal:

- from which Brucella sp has been isolated,
- with a positive result to serological tests associated with abortion or orchitis,
- with a positive result to a brucellin skin-test.

Diagnostic/analytical methods used

The diagnostic methodes are serology (serum testing by: RBT, CFT, Bulk ELISA, Individual ELISA and milk testing by : ring-Test, ELISA), bacteriology and brucellin

skin-test.

Vaccination policy

Vaccination of animals against brucellosis is expressly forbidden by animal health legislation.

Control program/mechanisms

The control program/strategies in place

Bovine brucellosis control is based on technical collaboration between the veterinary services, the sanitary veterinarians, the veterinary or the dairy interprofessional laboratories and the Animal Health Groups (AHG). In each department, an AHG brings together the stockbreeders, the veterinary services, the agricultural organisations, the veterinary practitioners and veterinary laboratories.

The regulation stipulates that any cattle herd shall acquire and preserve the "officially bovine brucellosis free" status. The regulation lays down that vaccination is forbidden. Herd testing and introduction tests for movements considered at risk are mandatory. Abortions, which are notifiable mandatory, have to be officially investigated. Slaughtering of infected animals is mandatory. The total depopulation of an infected herd can be proposed by the local director of the veterinary services.

The AHG created for more than 40 years inform the stockbreeders and share out the costs of the fight among the stockbreeders (members of AHG). Under the supervision of the DDSV (local directions of veterinary services), the sanitary veterinarians take the official blood samples, which are analysed by the departmental (public) veterinary laboratories.

The interprofessional dairy laboratories perform the routine test on milk. These laboratories are approved for testing brucellosis and are regularly involved in interlaboratory ring-tests organised by the National Reference Laboratory for brucellosis (Afssa). The DDSV receive the results of the analyses, ensure the follow-up of the herd status, perform the procedures for differential diagnosis of the disease as well as supervise the cleaning and disinfection of herds infected.

The CCA (Food Safety Directorate) works out the regulation and collects the epidemiological data. Afssa (Unit zoonoses bacterial - national Laboratory and OIE/FAO of reference for animal brucellosis), brings a scientific and technical support to CCA, identifies the strains of *Brucella* isolated in France and validates the reagents.

Measures in case of the positive findings or single cases

In case of isolation of *Brucella* from cattle, the herd of origin is considered as infected. All animals of the herd are checked serologically and positive animals to any test are slaughtered. If the prevalence rate of positive animals is high, total depopulation of the herd is prescribed.

Notification system in place

Bovine brucellosis is a notifiable disease under animal health legislation. Notification of abortion is compulsory. Aborting animals and abortion material are sampled for serological and bacteriological examinations.

Results of the investigation

In 2005, more than 64131 herds, housing more than 19.5 million bovines were included in the prophylaxis against bovine brucellosis (Cf. Table 3.7). In 2005, 150 533 herds had serological tests and 70 683 herds had tests on bulk milk for brucellosis, and 55 716 abortions were reported.

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

The annual herd prevalence rate, which was 1.65% in 1984, decreased to 0% in 2005. The annual herd incidence rate, which was 0.5% in 1985, decreased to 0% in 2005.

The last abortion case caused by *Brucella* in cattle occurred in June 2002. The last case of bovine brucellosis was reported in May 2003 and no case occurred in 2004 and 2005. Therefore, bovine brucellosis is considered quite eradicated and France achieved Officially Brucellosis Free status in September 2005.

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

The risk of humans contracting brucellosis from bovine animals is assumed to be extremely low.

B. *Brucella melitensis* in Sheep

Status as officially free of ovine brucellosis during the reporting year

Free regions

Sixty-four "départements" of France are recognised officially free for ovine and caprine brucellosis (*B. melitensis*) since 2001 (decision CE/93/52).

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

The annual herd prevalence rate, which was 2.8% in 1994, decreased to 0% in 2005. The annual herd incidence rate, which was 0.98% in 1991, decreased to 0 % in 2005.

C. *Brucella melitensis* in Goat

Status as officially free of caprine brucellosis during the reporting year

Free regions

Sixty-four "départements" of France are recognised officially free for ovine and caprine brucellosis (*B. melitensis*) since 2001 (decision CE/93/52).

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

The annual herd prevalence rate, which was 0.4% in 1993, decreased to 0% in 2005. The annual herd incidence rate, which was 0.24% in 1991, decreased to 0% in 2005.

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							
	Herds	Animals	Number of herds	%	Number of herds	%	Serological tests			Examination of bulk milk samples			Information about abortions			Epidemiological investigation				
							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 microbiologically	Number of positive animals
FRANCE	264131	19591609	264131	100	0	0	150533	4351161	0	70693	0	55716	0	20238	227391	1513	709	0	0	41
Total	264131	19591609	264131	100	0	0	150533	4351161	0	70693	0	55716	0	20238	227391	1513	709	0	0	41

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 prevalence	% new positive herds - herd incidence
Aquitaine	4202	4202	4002	0	0	0	0	95.24	0	0
Corse	1078	1078	733	0	0	0	0	67.996	0	0
Languedoc-Roussillon	197	197	197	0	0	0	0	100	0	0
Midi-Pyrénées	3262	3262	2889	0	0	0	0	88.565	0	0
Provence-Alpes-Côte d'Azur	3220	3220	3001	0	0	0	0	93.199	0	0
Rhône-Alpes	1147	1147	1147	0	0	0	0	100	0	0
Total	13106	13106	11969	0	0	0	0	91.325	0	0
Total - 1										

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

Region	Total number of animals	Number of animals tested under the programme	Number of animals tested	Number of animals tested individually	Number of new 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
Aquitaine	628905		180000	180000	0	0	0	0	0
Corse	139421		133832	133832	0	43	281	0	0
Languedoc-Roussillon	18256		18256	18256	0	0	0	0	0
Midi-Pyrénées	191163		83176	83176	0	0	0	0	0
Provence-Alpes-Côte d'Azur	692669		596330	596330	0	117	117	0	0
Rhône-Alpes	70286		70286	70286	0	6	6	0	0
Total	1740700	0	1081880	1081880	0	166	404	0	0
Total - 1									

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 animals	%	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	
Alsace	1048	6671	508	48.47	0	0	876	6671	0	947	1	0	13	0	
Aquitaine	5171	129088	3889	75.21	0	0	1876	54353	0	215	0	0	4	0	
Auvergne	8116	39556	4679	57.65	0	0	3290	88248	0	179	0	0	9	0	
Basse-Normandie	6048	80300	2926	48.38	0	0	463	7690	0	0	0	0	0	0	
Bourgogne	6258	95888	5677	90.72	0	0	2471	62889	0	593	0	0	5	0	
Bretagne	7439	93409	2782	37.4	0	0	1030	18259	0	0	4	0	6	0	
Centre	5944	263342	3840	64.6	0	0	1584	106976	0	1016	172	0	22	0	
Champagne-Ardenne	2147	11830	1794	83.56	0	0	619	7939	0	0	0	0	1	0	
Franche-Comté	2466	40900	1420	57.58	0	0	250	5954	0	1	0	0	1	0	
Haute-Normandie	4231	50340	1969	46.54	0	0	1465	27655	0	1028	0	0	16	0	
Île de France	516	7190	176	34.11	0	0	162	3492	0	0	1	0	0	0	
Languedoc-Roussillon	3224	292600	2802	86.91	0	0	6908	117848	0	10720	0	0	57	0	
Limousin	8710	71497	4289	49.24	0	0	2008	72977	0	0	0	0	0	0	
Lorraine	2225	147206	2558	114.97	0	0	827	23818	0	442	0	0	40	0	
Midi-Pyrénées	7280	818958	6165	84.68	0	0	3886	120492	0	5034	38	0	30	0	
Nord - Pas-de-Calais	1943	0	1008	51.88	0	0	757	4339	0	0	0	0	0	0	
Pays de la Loire	9112	108017	3566	39.14	0	0	1315	29533	0	0	0	0	1	0	
Picardie	3151	51896	1684	53.44	0	0	1261	21182	0	113	0	0	6	0	
Poitou-Charentes	9852	903800	7376	74.12	0	0	959	114636	0	70	8	0	2	0	
Rhône-Alpes	9358	185663	7560	80.79	0	0	3908	116319	0	580	14	0	27	0	
Total	104339	3398151	66688	1279.39	0	0	35925	1011270	0	20938	238	0	240	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	
	Herds	Animals	Herds	Animals	Last check positive		Last check negative		Herds	Animals	Herds	Animals	Herds	Animals
Aquitaine	4202	628905	214		1	226	180	1760	21	880	0	0	3967	628000
Corse	1078	139421	248		14	249	311	0	60	0	470	0	300	34603
Languedoc-Roussillon	197	18256	0		0	0	0	0	1	99	0	0	197	18256
Midi-Pyrénées	3262	191163	363		0	0	0	0	10	15	0	0	2889	181100
Provence-Alpes-Côte d'Azur	3220	692669	430		1	855	84	2374	52	8985	1707	261099	1031	69591
Rhône-Alpes	1147	70286	0		0	0	0	0	0	0	36	2520	1111	70000
Total	13106	1740700	1255	0	16	1330	575	4134	144	9979	2213	263619	9495	1001550
Total - 1														

2.7. YERSINIOSIS

2.7.1. General evaluation of the national situation

2.7.2. Yersinia in foodstuffs

2.7.3. Yersinia in animals

2.8. TRICHINELLOSIS

2.8.1. General evaluation of the national situation

2.8.2. Trichinella in animals

Table Trichinella in animals

	Source of information	Sampling unit	Units tested	Total animals positive for Trichinella	T. spiralis	Trichinella spp., unspecified
Pigs						
fattening pigs						
raised under controlled housing conditions in integrated production system	LCA, AFSSA	animal	3000000	0		
breeding animals unspecified						
sows and boars	LCA, AFSSA	animal	155000	0		
Solipeds, domestic						
horses	LCA, AFSSA	animal	25000	0		
Wild boars						
wild	LCA, AFSSA	animal	5782	0		
farmed	LCA, AFSSA	animal	1215	0		
Foxes	AFSSA	animal	60	0		

2.9. ECHINOCOCCOSIS

2.9.1. General evaluation of the national situation

A. Echinococcus spp general evaluation

History of the disease and/or infection in the country

The presence of the parasite was reported in the fox since 1970 in several French départements of the North-East of France: Meurthe-et-Moselle, Meuse, Bas-Rhin, Haut-Rhin, Vosges, Haute-Saône and Doubs. Since this date, the presence of the parasite was reported in several départements. In 1988, the distribution of the parasite in the final host covered a great north-eastern quarter of France as well as the Massif Central area.

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

Recent results suggest that the parasite spreads on the French territory. In France as in Europe, the reasons of this new distribution of the parasite are not clearly elucidated. It can be due to a more active research of the parasite or a real extension of the parasite.

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

For ten years, the population of red foxes has been constantly increasing in France as in Europe. The progression of foxes in urban zones is currently observed. Foxes live now in contact with population and their presence was reported in different cities.

Recent actions taken to control the zoonoses

The infection rate in foxes is currently assessed in 39 French départements and specific studies are carried out on urban foxes. Moreover, domestic dogs and cats were checked for parasite in 2004.

An information leaflet presenting preventive measures in general population was devised by the public health authorities and disseminated in the decentralised services of the ministries in charge of health and agriculture.

Additional information

A study relating to the infection of the domestic dogs and cats was carried out in 2004 in a strongly endemic zone of alveolar echinococcosis in order to evaluate the role of dogs and cats in the transmission of the parasite to the man. Faecal materials from 130 dogs and 70 cats were collected and analysed by means of an ELISA test and techniques of molecular biology. Infection of foxes from the zone studied was confirmed but the parasite was not isolated in domestic animals tested.

In 2004, two wild boars (aberrant host) were also detected positive.

2.9.2. Echinococcus in animals

Table Echinococcus spp. in animals

	Source of information	Sampling unit	Units tested	Total units positive for Echinococcus spp.	E. granulosus	E. multilocularis	Echinococcus spp., unspecified
Dogs	AFSSA	animal	132	0	0		
Cats	AFSSA	animal	72	0	0		
Foxes	AFSSA	animal	172	10	10		
Badgers							
wild	AFSSA	animal	21	0	0		
Polecats	AFSSA	animal	6	0	0		
Marten	AFSSA	animal	10	0	0		
Lynx							
wild	AFSSA	animal	1	0	0		
Alpine chamois	AFSSA	animal	1	0	0		

2.10. TOXOPLASMOSIS

2.10.1. General evaluation of the national situation

2.10.2. Toxoplasma in animals

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

In contrast to the type that prevailed at the start of the last century, which was maintained in dogs, the type of rabies that has occurred in France during the second part of the twentieth century has been maintained essentially in red foxes. The vulpine rabies reappeared in France in 1968 spreading from an outbreak, which is thought to have started in 1939-1940 at the Polish/Russian border and advanced westwards.

From 1968 to 1989, the front of the vulpine rabies included the north-eastern quarter of France (approximately 1000 to 2500 cases were annually diagnosed during this period, including domestic animals and foxes). During this period, no case of indigenous human rabies were reported (the last case was reported in 1924). The success of the programmes of oral vaccination of the foxes against rabies, performed with the collaboration of the veterinary services, of Afssa Nancy, resulted in the eradication of the rabies in red foxes. On April 30, 2001, France was recognised officially free of rabies according to the criteria of OIE (which excludes the European Bat Lyssavirus).

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

Taking account of the importance of exotic tourism, North-South and East-West exchanges, and the growing passion for the pets, the entry of the canine rabies is particularly to fear at the time of the holidays. It relates to the illegally imported infected dogs (22 case from 1968 to 2005). The last case in August 2004 was particularly alarming because of the multiplicity of the contacts between the rabid dog "Tikki" and the population at the time of the cultural festivals in summer in the south-west of France.

In 1989, it was recognised that France bats may carry a rabies-like virus, European Bat Lyssavirus 2 (EBL2). Since 1998, except dogs imported clandestinely, only bats have been diagnosed rabid in France. The emergence of the disease in bats, whereas it disappeared in the foxes, could pose new problems of public health.

For the travellers, the rabies can be contracted abroad in a country where canine rabies is maintained. According to the data of National Reference Centre (Pasteur Institute, Paris), 20 imported cases of rabies occurred in France between 1970 and 2003. The last imported case was reported in October 2003 in a 3 year old child going back from Gabon.

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

The risk of exposure for humans is very low. Since EBL is found in the French bat population, people being in contact with bats should be aware of the risk. Concerning the risk of introduction of canine rabies from abroad, travellers should be dissuaded from bringing back animals from endemic areas into France and the EU. Large prevention campaigns are performed by the Ministry of Agriculture in summer to inform the travellers of the risk of entry of the urban dog-mediated rabies in France and in UE.

Recent actions taken to control the zoonoses

The risk of transmission of the bat rabies to the man is regarded as low. The bats are protected in France. It is thus recommended not to approach them and capture, transport, sale, purchase or destruction of bats are prohibited. Information campaigns on the bat rabies were carried out in the schools, urgency medical centres, antirabies treatment centres, the decentralised services of the youth and sports Ministry. These campaigns aim to make public (in particular young people) more aware of the danger in touching a bat or handling a sick, injured or died animal. It was in addition recommended to perform preventive rabies vaccination and a specific serological follow-up of the bat handlers (approximately 300 in France).

A large prevention campaign on the topic "Do not bring back the rabies among your memories of holidays !" was performed in 2004 and 2005 by the Ministry of Agriculture to inform the travellers of the risk of entry of the urban dog-mediated rabies in France and in UE. Posters and leaflets were widely disseminated in the veterinary clinics, in the DDSV, at the border posts, in the railway stations and the airports. Travellers are dissuaded from bringing back animals with them (or at least, if they must, then sternly urged to conform to the health regulations imposed) and encouraged to avoid a contact with any domestic carnivores, particularly strays. The campaign will be performed again during summer in 2006.

Preventive rabies vaccination is recommended for travellers who stay in the high-risk countries (in Asia, Africa, the Middle East, South America).

Suggestions to the Community for the actions to be taken

The alert that was given following the case of rabies in a dog imported illegally from Morocco shows up the necessity for a certain number of measures to be taken at the Community level. The UE is actually free from canine rabies and whe should take all appropriate steps to keep it so. More information campaigns to travellers and to sea and air transport companies are needed. In accordance with CE 998/2003, stricter controls on the community borders (in particular at the borders with countries not free from dog-mediated rabies) should be implemented to fight against animal trafficking. UE could also support the efforts of the Maghreb countries in their fight against this serious enzootic.

2.11.2. Lyssavirus (rabies) in animals

A. Rabies in dogs

Control program/mechanisms

Recent actions taken to control the zoonoses

A case of canine rabies was confirmed on 26 August 2004 by the Pasteur Institute laboratory in a 4 month-old female mongrel puppy called Tikki, imported illegally into France from Morocco on 11 July 2004, unidentified and not properly vaccinated against rabies, and transported by road. This is the third case in 2004 of rabies imported into France from Morocco by road.

Given the knowledge we now have on canine rabies, we determined the period of risk with saliva excretion of the rabies virus between 2 and 21 August 2004. But during this time, the animal had been in several public places with her owner (around Bordeaux) and to cultural events in the South West of France. The dog came into contact with numerous adults and children (including foreigners) and pets.

Daily regional press releases were intended to urge people who may have been in contact with this animal to contact health services.

This information was also given to the European Commission and to O.I.E., and to the veterinary services of the 25 member States, who immediately sent on this rabies alert.

Measures taken

As from 28 August 2004, orders of the prefect with a declaration of urban rabies infection in regions free from rabies were implemented in Bordeaux, as well as Libourne, Hostens, Léognan and Gradignan (Gironde), Périgueux (Dordogne) and Miramont de Guyenne (Lot et Garonne).

On 3 September 2004, in view of the first results of the epidemiological investigations, these measures were extended by order of the minister to the three "departments" in order to reinforce the plan of attack against the appearance of rabies in south west France.

This was updated on 28 September 2004 on certain criteria by order of the ministry:

- Free circulation of identified and properly rabies-vaccinated dogs, under the direct supervision of their owner;
- Dogs not properly vaccinated and cats (even vaccinated) to be tethered or kept indoors, dogs on a leash and muzzled;
- Pet-owners are forbidden to part with domestic carnivores not properly vaccinated;
- Epidemiological investigation of any sick or dead domestic carnivore;
- Reinforcement of measures to be taken against stray animals (updated by order of the ministry on 28/09/2004);
- Any show or gathering of pet carnivores forbidden in the zone (apart from hunting events, which remain authorised only with properly identified and rabies-vaccinated dogs);
- The participation of domestic carnivores from the zone in shows or gatherings outside the zone is forbidden (except for those properly identified and rabies-vaccinated, with an antirabies antibody titration over or equal to 0.5 U.I./ml - dispensation defined by order of the ministry 28/09/2004).

Moreover, all the Regional Veterinary Services and the French veterinary surgeons were alerted : reinforcement of the supervision of animals that bite, claw or are suspected of

having rabies, reinforced vigilance in stopping the illegal entry of dogs into France.

Results of the investigation

Investigations of the human contacts with positive cases

Following publication in the press of warning messages with a picture of the dog and information on the dates and places where there could have been contamination, about 4000 telephone calls were received by the emergency committee at the Gironde préfecture. For most of these there was found to be no serious risk.

More thorough epidemiological investigations are under way on 300 persons, half of whom have been sent to an antirabies treatment centre. Forty-six dogs and 8 cats certain to have been in contact with the rabid animal during the saliva excretion risk period (from 2 to 21 August 2004) were sacrificed for analysis. Twelve dogs have still not been found.

Furthermore, public opinion having become sensitive to the problem with this crisis has enabled the veterinary and veterinary services network to take charge of more than three hundred animals (cats and dogs) illegally brought into France (not properly identified and/or not properly vaccinated against rabies) namely from Morocco, Algeria, Tunisia, and Turkey, countries that are not free from canine rabies.

The health inquiries which are held for each individual animal in order to determine their past have led to them being either sacrificed in the search for rabies on the encephalon of a non-conforming animal at great risk, or put under close health supervision for one year.

All the samples analysed for rabies have been found to be negative up till now.

Table Rabies in animals

	Source of information	Sampling unit	Units tested	Total units positive for Lyssavirus (rabies)	European Bat Lyssavirus 1 (EBL 1)	unspecified lyssavirus
Cattle (bovine animals)	Afssa	animal	15	0		
Sheep	Afssa	animal	3	0		
Solipeds, domestic	Afssa	animal	3	0		
Dogs	Afssa	animal	1018	0		
stray dogs			0	0		
Cats	Afssa	animal	662	0		
stray cats			0	0		
Bats						
wild	Afssa	animal	202	4	4	
Foxes						
wild		animal	616	0		
Badgers						
wild	Afssa	animal	1	0		
Marten						
wild	Afssa	animal	25	0		
Wild boars						
wild	Afssa	animal	5	0		
Deer						
wild						
roe deer	Afssa	animal	7	0		
Ferrets						
wild						
- Surveillance - official controls (other than control and eradication programmes)	Afssa	animal	25	0		
Rodents						
wild						

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- Surveillance - official controls (other than control and eradication programmes) - official sampling	Afssa	animal	1	0		
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3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE

3.1. ESCHERICHIA COLI, NON-PATHOGENIC

3.1.1. General evaluation of the national situation

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

Table Antimicrobial susceptibility testing of E. coli in Cattle (bovine animals) - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to																						
E. coli																						
Cattle (bovine animals) - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																						
Isolates out of a monitoring programme	no																					
Number of isolates available in the laboratory	100																					
Antimicrobials:	N	≥0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines	100	26			0	0	15	38	19	2	1	1	9	9	6	0						
Amphenicols																						
Chloramphenicol	100	14					1	10	66	9	1	1	1	1	4	6	1					
Florfenicol	100	5					1	23	61	10	0	5										
Fluoroquinolones																						
Ciprofloxacin	100	0	90	1	1	5	2	0	0	0	0											
Quinolones																						
Nalidixic acid	100	9					3	69	17	2	0	0	2	1	3	3						
Trimethoprim	100	12		11	23	34	18	2	1	3	3											
Aminoglycosides																						
Streptomycin	100	20					1	54	20	5	1	3	6	8	2	0						
Gentamicin	100	5			34	49	9	1	2	0	3	1	1									
Neomycin	100	12				48	30	9	0	0	1	2	4	6								
Penicillins																						
Ampicillin	100	14						46	38	2	0	0	0	1	3	6	4					

Table Antimicrobial susceptibility testing of E. coli in Pigs - fattening pigs - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to																						
E. coli																						
Pigs - fattening pigs - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																						
Isolates out of a monitoring programme	no																					
Number of isolates available in the laboratory	100																					
Antimicrobials:	N	↔0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest	
Tetracyclines	100	86			0	0	6	4	4	0	1	2	31	42	7	3						
Amphenicols																						
Chloramphenicol	100	14					0	9	66	11	3	7	2	1	1	0						
Florfenicol	100	1					0	19	65	15	1	0										
Fluoroquinolones																						
Ciprofloxacin	100	1	96	0	1	2	0	0	1	0	0	0										
Quinolones																						
Nalidixic acid	100	3					5	50	41	0	1	0	0	1	1	1						
Trimethoprim	100	44					12	1	0	1	0	0	1	43								
Aminoglycosides																						
Streptomycin	100	62					0	13	17	8	10	24	17	7	4	0						
Gentamicin	100	0					29	59	2	1	0	0	0	0								
Neomycin	100	5					42	46	5	1	1	2	2									
Penicillins																						
Ampicillin	100	22					38	38	2	0	0	0	0	2	6	8	6					

Table Antimicrobial susceptibility testing of E. coli in broilers - Gallus gallus (fowl) - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling - quantitative data [Dilution method]

Number of resistant isolates (n) and number of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to		E. coli																			
Gallus gallus (fowl) - broilers - sampling in framework of broiler baseline study - at slaughterhouse - animal sample - faeces - Monitoring - monitoring survey - objective sampling																					
Antimicrobials:	N	≥0.03	0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128	256	512	1024	2048	>2048	lowest	highest
		n	0	0	0	7	13	7	0	0	4	34	30	5	0						
Tetracyclines	100	73	0	0	0	7	13	7	0	0	4	34	30	5	0						
Amphenicols	100	8					1	19	65	7	1	0	1	6	0	0					
Chloramphenicol	100	0					0	38	57	5	0	0	0	0							
Florfenicol	100	0																			
Fluroquinolones	100	4	73	2	3	14	4	0	1	2	1										
Ciprofloxacin	100	4	73	2	3	14	4	0	1	2	1										
Quinolones	100	26					4	42	27	1	0	2	4	6	10	4					
Nalidixic acid	100	38		2	12	29	15	2	0	2	0	0	0	38							
Trimethoprim	100	38		2	12	29	15	2	0	2	0	0	0	38							
Aminoglycosides	100	39						0	27	28	6	10	7	7	8	6	1				
Streptomycin	100	1			22	64	12	1	0	0	0	0	1								
Gentamicin	100	14				28	52	4	1	0	4	5	5								
Neomycin	100	37					38	21	4	0	0	0	0	3	16	13	5				
Penicillins	100	37					38	21	4	0	0	0	0	3	16	13	5				
Ampicillin	100	37					38	21	4	0	0	0	0	3	16	13	5				

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		no		no			
Number of isolates available in the laboratory	100		100		100			
Antimicrobials:	N	n	N	n	N	n	N	n
Tetracyclines	100	26	100	86	100	73		
Amphenicols								
Chloramphenicol	100	14	100	14	100	8		
Florfenicol	100	5	100	1	100	0		
Fluoroquinolones								
Ciprofloxacin	100	0	100	1	100	4		
Quinolones								
Nalidixic acid	100	9	100	3	100	26		
Trimethoprim	100	12	100	44	100	38		
Aminoglycosides								
Streptomycin	100	20	100	62	100	39		
Gentamicin	100	5	100	0	100	1		
Neomycin	100	12	100	5	100	14		
Penicillins								
Ampicillin	100	14	100	22	100	37		
Fully sensitive	100	71	100	10	100	14		
Resistant to 1 antimicrobial	100	4	100	18	100	21		
Resistant to 2 antimicrobials	100	3	100	29	100	20		
Resistant to 3 antimicrobials	100	4	100	17	100	18		
Resistant to 4 antimicrobials	100	6	100	19	100	13		
Resistant to >4 antimicrobials	100	12	100	7	100	14		

Table Breakpoints used for antimicrobial susceptibility testing of E. coli in Animals

Test Method Used

Disc diffusion
Agar dilution
Broth dilution
E-test

Standards used for testing

NCCLS

Escherichia coli, non-pathogenic	Standard for breakpoint	Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		disk content microg	breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest		Susceptible >=	Intermediate	Resistant <=
Tetracyclines	8	4	8	8	0.25	256				
Amphenicols										
Chloramphenicol	16	8	16	16	2	512				
Florfenicol	16	16		16	2	32				
Fluoroquinolones										
Ciprofloxacin	1	0.5	1	1	0.008	8				
Enrofloxacin										
Quinolones										
Nalidixic acid	16	8	16	16	1	256				
Trimethoprim	8	4	8	8	0.125	64				
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin	16	8	16	16	2	512				
Gentamicin	4	2	4	4	0.25	32				
Neomycin	16	8	16	16	0.5	64				
Kanamycin										
Trimethoprim + sulfonamides										
Cephalosporins										
3rd generation cephalosporins										
Penicillins										
Ampicillin	16	4	8-16	16	2	512				

Table Breakpoints used for antimicrobial susceptibility testing of E. coli in Feedingstuff

Test Method Used

Disc diffusion
Agar dilution
Broth dilution
E-test

Standards used for testing

NCCLS

Escherichia coli, non-pathogenic	Standard for breakpoint	Breakpoint concentration (microg/ml)			Range tested concentration (microg/ml)		disk content microg	breakpoint Zone diameter (mm)		
		Susceptible <=	Intermediate	Resistant >	lowest	highest		Susceptible >=	Intermediate	Resistant <=
Tetracyclines										
Amphenicols										
Chloramphenicol										
Florfenicol										
Fluoroquinolones										
Ciprofloxacin										
Enrofloxacin										
Quinolones										
Nalidixic acid										
Trimethoprim										
Sulfonamides										
Sulfonamide										
Aminoglycosides										
Streptomycin										
Gentamicin										
Neomycin										
Kanamycin										
Trimethoprim + sulfonamides										
Cephalosporins										
3rd generation cephalosporins										
Penicillins										
Ampicillin										

4. 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, epidemiological investigations and reporting of foodborne outbreaks

A foodborne outbreak is defined as "the occurrence of at least two cases of a similar illness, usually gastro-intestinal, due to the consumption of a common food product".

Notifications of foodborne outbreaks are done by general practitioners, hospital physicians and medical laboratories. Food-borne outbreaks can also be notified by the head of the establishment (schools, restaurants, etc.) or the head of the family where the cases occur. Outbreaks are investigated by the local public health authorities (Ddass = Direction départementale des affaires sanitaires et sociales) and veterinary officers (Ddsv = Direction départementale des services vétérinaires). Standardized reports are sent to the French public health institute (Institut de Veille Sanitaire, InVS) and to the ministry of Agriculture. These reports are pooled and analyzed on an annual basis after checking for double notifications. The results are annually published in the Bulletin Epidémiologique Hebdomadaire.

Description of the types of outbreaks covered by the reporting:

The following results include foodborne outbreaks notified in the framework of mandatory notification. Data from outbreaks of salmonellosis and campylobacteriosis reported by the National Reference Laboratories can't be pooled with data collected from mandatory notification for two main reasons:

- there is actually no way to identify common notifications between the two systems.
- the NRL provides data only for salmonellosis and campylobacteriosis outbreaks. The foodborne origin of these outbreaks is not confirmed.

Salmonellosis outbreaks notified by the NRL are used to assess the sensitivity of the mandatory notification framework for salmonellosis outbreaks. The sensitivity of the mandatory notification system for salmonellosis outbreaks has been estimated to 20% in 1995 and to 26% in 2000.

Because of these reasons, only epidemiological characteristics of foodborne outbreaks reported through the mandatory notification system are presented in this report. Since no data is yet available for the year 2004, the results presented below correspond to the year 2003.

National evaluation of the reported outbreaks in the country:

Trends in numbers of outbreaks and numbers of human cases involved

In 2003, a total number of 584 foodborne outbreaks (6620 cases) were reported under the mandatory notification system. In 47% of these outbreaks, the causative agent was laboratory confirmed. The causative agent was identified based on epidemiological

findings in 26% of the outbreaks.

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

The causative agent was isolated in the incriminated foodstuff or epidemiologically suspected in 71% of the outbreaks (table).

Salmonella was the most frequently identified agent in foodborne disease outbreaks followed by Bacillus cereus. In a large proportion of salmonellosis outbreaks (71%) the serotype was identified; the predominant serotype was S. Enteritidis, followed by S. Typhimurium as in previous years.

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

More than 60% of the outbreaks were reported to be linked to mass catering facilities. Salmonellosis outbreaks occurred mainly in private homes and commercial restaurants as a result of control measures implemented to reduce salmonellosis hazards in the restoration/public sector. In other collectives, this different frequency distribution reflects the efficacy of the control measures that have been implemented to reduce salmonellosis hazards in the restoration/public sector. In private homes, education programs (e.g. storage and cooking) may, therefore, be needed as complementary measures to limit the transmission of salmonellosis.

The most important factors contributing to foodborne disease outbreaks reported were contamination of food through equipment (52%), inadequate cooling or heating (42%) and use of contaminated raw material (24%).