



EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL
Unit 04 - Veterinary Control Programmes

SANCO/3839/2008

*Programmes for the eradication, control and monitoring of certain
animal diseases and zoonoses*

Control programme of Salmonella in breeding, laying and broiler flocks

Approved* for 2009 by Commission Decision 2008/897/EC

Hungary

* in accordance with Commission Decision 90/424/EEC



**Central Agricultural Office
Animal Health and Animal Welfare Directorate**

HUNGARY

Application

**for Community financing for the national control programme
of Hungary for**

**Salmonella spp.
in breeding flocks of Gallus gallus**

for the year 2009.

30th of April, 2008

1. Identification of the programme

Member State: **Hungary**

Disease: **Infection of animals with zoonotic *Salmonella* spp.**

Animal population covered by the programme: **Breeding flocks of *Gallus gallus***

Year of implementation: **2009**

Reference of this document: **02/1889/2008.**

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Date sent to the Commission: **30th of April, 2008**

2. Historical data on the epidemiological evolution of zoonotic salmonellosis specified in point 1

Monitoring and control programmes for *Salmonella* spp. (*S. enteritidis* and *S. typhimurium*) started in Hungary in 1997 by issuing official guidelines for the poultry sector. The goal of the project was to achieve similar targets as which were set by Council Directive 92/117/EEC. The collection of guidelines were ordered by the Ministry of Agriculture and were prepared by an expert group consisting of both Hungarian experts of various backgrounds (Hungarian Academy of Science, National Food Investigation Institute, Central Veterinary Institute and numerous practicing veterinarians) and experts of the Agri-Livestock Consultant Ltd (W. Edel and C. Wray). The work was financed by the PHARE programme of the European Union under project No. III 9304-05-02. The programme covered the whole poultry sector in relation of *Gallus gallus*, breeding flocks, hatcheries, broiler flocks, table egg producing layer flocks, egg packaging and distribution establishments, poultry slaughterhouses, cutting plants as well as feed mills. The guidelines stated clearly that there is an urgent need for centralised official administrative measures in the form of a ministerial decree by the Minister of Agriculture.

The first decree was created in the year 2002: Decree 49/2002. (V. 24.) of the Minister of Agriculture and Rural Development on protection against salmonellosis and poultry typhus and on retaining officially free status, and was modified by the Decree 97/2003. (VIII. 19) Minister of Agriculture and Rural Development. A new Decree was created and came into force on the 7th of January, 2008, and can be referred to as Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis (hereinafter: "Decree"). The aim of creating the new Decree was to ensure compliance with the changes in the Community legislation.

The Decree sets the conditions of the obligatory control measures in breeding, laying flocks and voluntary (mandatory from 2009) measures in broiler flocks of *Gallus gallus* against specified *Salmonella* serotypes. As a prerequisite, there is an obligation of the holdings keeping breeding flocks of *Gallus gallus* to be registered by the State Veterinary Service. Results of testing required by the Decree are also to be notified to the Directorate of Food Chain Safety and Animal Health of County Agricultural Office (formerly named: County Animal Health and Food Control Station).

As a result of the above mentioned mandatory control in breeding flocks of *Gallus gallus*, latest data show that infection amongst these flocks is below 6%. However, the Community target which is set by Commission Regulation (EC) of 30 June 2005 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain *Salmonella* serotypes in breeding flocks of *Gallus gallus* and amending Regulation (EC) No 2160/2003 is a maximum of 1%. This goal can only be achieved by a rigorous control programme using extensive professional and financial resources.

3. Description of the submitted programme

The main objective of the programme is to comply with existing Community legislation, to achieve Community prevalence targets within the defined time period available as regards breeding flocks of *Gallus gallus* in the territory of Hungary. The programme covers the five zoonotic *Salmonella* serotypes most relevant in relation to public health (*S. enteritidis*, *S. typhimurium*, *S. infantis*, *S. virchow* and *S. hadar*).

Included in the programme are all breeding flocks of *Gallus gallus* registered in the territory of Hungary.

Laboratories involved in the programme must be accredited by the National Accreditation Body (NAT) and supervised by the National *Salmonella* Reference Laboratory (NRL) of the Republic of Hungary (Food and Feed Safety Directorate (formerly named: National Food Investigation Institute), Central Agricultural Office). The NRL will be in charge of coordination of the laboratories, the use of appropriate laboratory methods as well as for co-operation with the Community Reference Laboratory in Bilthoven (NL).

4. Measures of the submitted programme

4.1. Summary of measures under the programme

Duration of the programme:

First year: 2007

Last year: 2009

Control

Eradication

Testing

Testing

Slaughter of positive animals

Slaughter of positive animals

Killing of positive animals

Killing of positive animals

Vaccination

Extended slaughter or killing

Treatment

Disposal of products

. Disposal of products

Monitoring or surveillance

Other measures (*specify*):

- Flocks positive for *S. typhimurium* or *S. enteritidis* will be subject to movement control. As soon as the NRL confirms the infection, the flock shall be sent to isolated slaughter. Meat originating from such flocks may only be authorised for human consumption after meeting all relevant food safety requirements as regards of the Regulation (EC) No. 2160/2003. Annex II. Point F.
- Hatching eggs originating from such flocks may only be marketed according to the Regulation (EC) No. 2160/2003. Annex II. Point C.5.
- After emptying the relevant holding operators are required to implement proper cleansing and disinfection. Effectiveness of the procedure is controlled by the competent regional animal health authority. Restocking is only authorised, when cleansing and disinfection is deemed to be satisfactory.

4.2. Designation of the central authority charged with supervising and coordinating the departments responsible for implementing the programme:

All holdings must be registered at the district veterinary office. The official senior veterinary officer keeps and updates the record of holdings participating the programme. The official senior veterinary officer also declares the status of the holdings according to their actual serological status.

The 19 Directorates of Food Chain Safety and Animal Health of County Agricultural Offices coordinate and supervise the programme in their territory. They are required to annually report the actual status of the programme to the Animal Health and Animal Welfare Directorate of the Central Agricultural Office.

Name:	Central Agricultural Office Animal Health and Animal Welfare Directorate
Name in Hungarian:	Mezőgazdasági Szakigazgatási Hivatal Központ Állategészségügyi és Állatvédelmi Igazgatóság
Address:	1149 Budapest, Tábornok u. 2., Hungary
Tel.:	+36-1-460-6300
Fax:	+36-1-222-6065

4.3. Description and delimitation of the geographical and administrative areas in which the programme is to be implemented:

The programme will be implemented on the whole territory of Hungary. The programme is compulsory as from the 1st January, 2007, the third year of the programme starts as from the 1st January, 2009.

4.4. Measures implemented under the programme

4.4.1. Measures and terms of legislation as regards the registration of holdings:

Paragraph 3. (3) f) of Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis states that all holdings must be registered.

4.4.2. Measures and terms of legislation as regards the identification of animals: –

4.4.3. Measures and terms of legislation as regards the notification of the disease:

According to point 4. c) of Annex 1 to Decree 2/2008 (Protection in breeding flocks of *Gallus gallus*) (hereinafter: "Annex"): "If the salmonella test result is positive, the laboratory shall immediately inform the competent County Agricultural Office and the operator concerned, and simultaneously shall send the isolated salmonella stock together with a sample accompanying document complying with the template issued by Central Agricultural Office to the national reference laboratory operated by the Food and Feed Safety Directorate of Central Agricultural Office for testing and serotyping purposes. The copy of the accompanying document must be kept by the testing laboratory for 3 years."

4.4.4. Measures and terms of legislation as regards the measures in case of a positive result:

According to the Annex:

"6. a) If during serotyping the national reference laboratory finds infection of a *Salmonella* serotype, which is not a subject to Regulation 1003/2005/EC the place of keeping of animals must be strictly cleaned and disinfected after the production cycle of the flock.

b) If during serotyping the national reference laboratory finds infection with *Salmonella enteritidis* or *Salmonella typhimurium*, at the request of the operator a repeated test may be made, although movement restriction of the given flock and its products is ordered by the official senior veterinary officer until the test result is received. Repeated sampling must be made after 2 weeks from the previous sampling, and it has to be made only in the national reference laboratory. Antimicrobial test must be simultaneously made. If the infection is overcome by the animals during 2 weeks without the use of antibiotics, which is confirmed by the negative result of the repeated test, the official senior veterinary officer lifts the movement restriction of the flock and of its products.

7. a) If the result of the repeated test is also positive, or the operator does not request a repeated test, Part C Annex II to Regulation 2160/2003/EC must be followed. The official senior veterinary officer orders movement restriction of the given flock and its products, and immediately withdraws the official salmonella free certificate. The official certificate of other flocks of the farm may be simultaneously withdrawn, if the isolation of the infected flock is not fully guaranteed. In case of slaughtering the flock is sent to isolated slaughtering after the preliminary agreements with the slaughterhouse and the official senior veterinary officer supervising the slaughterhouse.

b) Processing procedures following the isolated slaughtering must be separated from the processing and handling of other basic materials of animal origin until salmonella is killed in an efficient and confirmed way, and these must be preliminary consulted with

the competent official senior veterinary officer. Wording "Originating from a salmonella positive flock" must be legibly and inerasably indicated on each packaging unit of the food basic material deriving from the isolated slaughter and processing, directly near the identification code and the tracking sign used within the establishment, as well as on the accompanying sales document. Raw material deriving from a positive flock may be used only for preparation of foods and the production process steps shall guarantee the end-product food to be free of salmonella. This must be confirmed with laboratory microbiological test results before marketing of each such food item into retail trade, and the competent supervising official veterinarian must be notified therefore.

- c)* After emptying the keeping place of the infected flock the operator must provide for the cleansing of the keeping place (the building, its facilities and equipment, side-rooms and passageways), and for its stringent disinfection as well as rodent and insect control in accordance with legislation in force. The rest of bedding must be disposed in accordance with the relevant legal rule. After taking the necessary steps the operator notifies the County Agricultural Office which controls the efficiency of measures taken.
 - d)* Restocking into the airspace concerned is permitted by the County Agricultural Office only if the efficiency of disinfection is found satisfactory by the laboratory test, and the operator has settled all costs of the test.
 - e)* The presence of salmonella in the feed of the infected flock must be immediately tested in accordance with the relevant legal rule. The feed may be given only to the infected flock until the test is negative. If the feed is found infected it must be disposed in accordance with the relevant rule, and facilities used for its storage and transportation must be disinfected. A separate test must be made for the detection of salmonella at the feed operator supplying the feed if infection is detected.
 - f)* In hatcheries receiving breeding eggs deriving from an infected flock Points 3 and 5 of Part C of Annex II to Regulation 2160/2003/EC must be followed in the procedure, and the contents of points *c)-d)* must be properly observed. The hatchery must contribute to the detection of the source of contamination on the basis of its records and bear the costs.
 - g)* A new officially salmonella free certificate must be requested in respect of the newly stocked flock, which must be issued on the basis of the consecutive test with a negative result.
8. *a)* If during serotyping within testing of the sample taken in the hatchery the national reference laboratory finds infection of a Salmonella serotype, which is not a Community target according to Regulation 1003/2005/EC the airspaces concerned must be strictly cleaned and disinfected after hatching in accordance with the relevant legal rule.
- b)* If during serotyping within testing of the sample taken in the hatchery the national reference laboratory finds infection with Salmonella Enteritidis or Salmonella Typhimurium, the official senior veterinary officer orders movement restriction in respect of the airspace concerned. All eggs and day-old chicken kept in the airspace concerned must be destroyed in accordance with the relevant legal rule. At the same time the operator running the breeding egg hatchery arranges for a confirmative test in accordance with point *d)* Part 3. The contents of Part 7 must be followed in respect of the breeding stock in case of a positive test result.

c) After emptying the infected airspace of the hatchery the operator must provide for the cleansing of the airspace (the building, its facilities and equipment, side-rooms and passage ways), and for its stringent disinfection as well as rodent and insect control in accordance with the relevant legal rule. After taking the necessary steps the operator notifies the County Agricultural Office, which controls the efficiency of measures taken.

d) Restocking of the airspace concerned is permitted by the regional organ of the County Agricultural Office only if the efficiency of disinfection is found satisfactory on the basis of the laboratory test, and the operator has settled all costs of the test.

9. a) If during serotyping of the sample with a positive result, taken in the breeding stock or in the hatchery infection with *Salmonella* Hadar, *Salmonella* Infantis or *Salmonella* Virchow is found, the operator revises its epidemic action plan within 30 days, and submits it to the competent County Agricultural Office for re-approval. The revised plan must contain revision of the hygienic conditions, particularly of the disinfection procedures and the efficiency of rodent control, the test results relating to the potential causes of the infection, and also the list of measures considered necessary. The plan is evaluated by the County Agricultural Office within 30 days. If the plan is found unsatisfactory by the County Agricultural Office, the official senior veterinary officer orders a movement restriction of the flock concerned and the hatchery's airspace until the plan is properly modified by the operator.

b) After the production cycle and the hatching cycle the keeping place of the animals must be strictly cleaned and disinfected in accordance with the relevant legal rule, and in case of the breeding flock point e) Part 7 must be followed in respect of the feed."

4.4.5. Measures and terms of legislation as regards the different qualifications of animals and herds:

See point 4.4.4.!

4.4.6. Control procedures and in particular rules on the movement of animals liable to be affected or contaminated by a given disease and the regular inspection of the holdings or areas concerned:

See point 4.4.4.!

4.4.7. Measures and terms of legislation as regards the control (testing, vaccination, ...) of the disease:

- Regulation (EC) No. 2160/2003. of the European Parliament and of the Council on the control of *Salmonella* and other food-borne zoonotic agents
- Commission Regulation No. 1003/2005/EC of 30 June 2005 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain *Salmonella* serotypes in breeding flocks of *Gallus gallus* and amending Regulation (EC) No 2160/2003
- Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of *Salmonella* in poultry
- Veterinary Act No. CLXXVI. of 2005
- Decree No. 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis
- Decree No. 41/1997. (V. 28.) of the Minister of Agriculture on Code of Veterinary Rules

4.4.8. Measures and terms of legislation as regards the compensation for owners of slaughtered and killed animals:

- Veterinary Act No. CLXXVI. of 2005

5. General description of the costs and benefits:

Costs and benefits are calculated based on the previous year's data of the Poultry Product Board of Hungary. In the case of breeding flocks costs will occur from the intensive sampling of the flocks as well as the tests performed on the samples (including both testing on the initiative of the operator and the veterinary authority), the measures to be applied in the case of infection (slaughter or killing of the flock, condemnation, transportation, cleansing and disinfection) as well as financial losses due to decreased income for the poultry industry.

A detailed description of the costs is listed under point 8.

Benefits in case of the successful programme include improved food safety which largely contributes to the achievement of public health goals of the Community.

6. Data on the epidemiological evolution during the last five years

6.1. Evolution of zoonotic salmonellosis

6.1.1. Data on evolution of zoonotic salmonellosis

Year:

Situation on date:

Animal species:

Region	Type of flock ^(b)	Total number of flocks ^(c)	Total number of animals	Total number of flocks under the programme	Total number of animals under the programme	Number of flocks checked ^(d)	Number of positive ^(e) flocks ^(f)		Number of flocks depopulated ^(g)	Total number of animals slaughtered or destroyed ^(h)	Quantity of eggs destroyed (number or kg) ⁽ⁱ⁾	Quantity of eggs channelled to egg products (number or kg) ^(j)
							(a1)	(a2)				
							(a3)	(a4)	(a5)	(a6)	(a7)	(a8)
Total												

- (a) For zoonotic Salmonellosis indicate the serotypes covered by the control programmes: (a1) for *Salmonella* Enteritidis, (a2) for *Salmonella* Typhimurium, (a3) for other serotypes-specific as appropriate, (a4) for *Salmonella* Enteritidis or *Salmonella* Typhimurium.
- (b) For example, breeding flocks (rearing, adult flocks), production flocks, laying hen flocks, breeding turkeys, broiler turkeys, breeding pigs, slaughter pigs, etc. Flocks or herds or as appropriate.
- (c) Total number of flocks existing in the region including eligible flocks and non-eligible flocks for the programme.
- (d) Check means to perform a flock level test under the programme for the presence of salmonella. In this column a flock must not be counted twice even if it has been checked more than once.
- (e) If a flock has been checked, in accordance with footnote (d), more than once, a positive sample must be taken into account only once.

6.2. Stratified data on surveillance and laboratory tests

6.2.1. Stratified data on surveillance and laboratory tests (one table per year and per disease/species)

Year: _____ Animal species ^(a): _____ Category ^(b): _____

Description of the used serological tests:

Description of the used microbiological or virological tests:

Description of the other used tests:

Region ^(c)	Serological tests		Microbiological or virological tests		Other tests	
	Number of samples tested ^(d)	Number of positive samples ^(e)	Number of samples tested ^(d)	Number of positive samples ^(e)	Number of samples tested ^(d)	Number of positive samples ^(e)
Total						

- (a) Animal species if necessary.
- (b) Category/further specifications such as breeders, laying hens, broilers, breeding turkeys, broiler turkeys, breeding pigs, slaughter pigs, etc, when appropriate.
- (c) Region as defined in the approved control and eradication programme of the Member State.
- (d) Number of samples tested.
- (e) Number of positive samples.

6.4. Data on vaccination programmes

Year: _____

Animal species: ^(a) _____

Description of the used vaccination

Region ^(b)	Total number of herds ^(c)	Total number of animals	Information on vaccination programme			
			Number of herds ^(c) in vaccination programme	Number of herds ^(c) vaccinated	Number of animals vaccinated	
					Number of doses of vaccine administered	
Total						

- (a) Animal species if necessary.
- (b) Region as defined in the approved control and eradication programme of the Member State.
- (c) Herds or flocks or holdings as appropriate.

7. Targets

7.1. Targets related to testing

7.1.1. Targets on diagnostic tests

Number and specification of tests

Mandatory testing will be performed in all breeding flocks of *Gallus gallus* during their whole life span. A preliminary calculation was made on the approximate number of tests to be performed in the flocks. The number of tests calculated is based on the approximate 3 % of breeding flocks containing more than 250 hens (what is 670 at the moment) and the testing scheme as provided for in the Annex to Commission Regulation No. 1003/2005/EC of 30 June 2005 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of *Gallus gallus* and amending Regulation (EC) No 2160/2003.

The Annex of the above mentioned Regulation requires all relevant breeding flocks to be tested three times during the rearing period and further testing every second week during the whole production period.

Breeding flocks are kept usually until the age of one year (52 weeks). The production period begins when the flock is 26 weeks of age.

In Hungary, breeding flocks are typically kept in barns which makes the taking of boot swabs the most effective way of detecting possible infection.

Using the above numbers and the testing scheme specified in the Regulation, each breeding flock will be sampled and tested approximately 17 times during a year. During each sampling five pairs of boot swabs will be taken and sent into the laboratory. This means that during a one-year period, 85 pairs of boot swabs will be taken in one flock.

Given that in Hungary there are 670 breeding flocks, the total number of samples to be taken in the frame of routine and official sampling is $670 \times 85 = 56950$ pairs of boot swabs.

In addition, when a flock is tested positive, confirmatory sampling will take place using 5 pairs of boot swabs and additional birds selected from the flock. Based on latest data approximately 3% of the flocks are infected with one or more of the 5 most relevant *Salmonella* serotypes. This means that in 3% of the 670 flock (in 20 flocks) confirmatory tests will be required with the testing of 5 pairs of boot swabs each. That gives another $20 \times 5 = 100$ pairs of boot swabs to be tested.

As a summary, $56950 + 100 = 57050$ pairs of boot swabs are expected to be tested for the detection of *Salmonella* spp.

Scrotyping will be performed from each positive isolate. Positivity is expected to be detected in 3% of regular samples ($56950 \times 0.03 = 1708$) and in 100% of the confirmatory samples (100), which makes a total of $1708 + 100 = 1808$ samples.

However, an exact number of tests which will be performed is not possible, because the time when the flock becomes infected can not predicted.

7.2. Testing scheme

Testing scheme as provided for in the Annex to Commission Regulation No. 1003/2005/EC of 30 June 2005 implementing Regulation (EC) No 2160/2003 as regards a Community target for the reduction of the prevalence of certain salmonella serotypes in breeding flocks of Gallus gallus and amending Regulation (EC) No 2160/2003 will be used.

Details of the testing scheme are the following:

1. Sampling frame

The sampling frame shall cover all adult breeding flocks of Gallus gallus comprising at least 250 birds.

2. Monitoring in breeding flocks

2.1. Location, frequency and status of sampling

Breeding flocks shall be sampled at the initiative of the operator and as part of official controls.

2.1.1. Sampling at the initiative of the operator

Sampling shall take place every two weeks at the holding. The detection of relevant salmonella serotypes during the sampling at the initiative of the operator has to be notified without delay to the County Agricultural Office, Directorate of Food Chain Safety and Animal Health by the operator, the sampler or the laboratory performing the analyses.

2.1.2. Official control sampling

Official sampling shall be carried out on three occasions during the production cycle:

- (a) within four weeks following moving to laying phase or laying unit;
- (b) towards the end of the laying phase, not earlier than eight weeks before the end of the production cycle;
- (c) during the production, at any time sufficiently distant from the samples referred to in points (a) and (b).

2.2. Sampling protocol

2.2.1. Routine sampling at the initiative of the operator

Sampling shall primarily consist of faecal samples and shall aim to detect a 1 % within flock prevalence, with 95 % confidence limit. To that effect, the samples shall comprise one of the following:

- (a) Pooled faeces made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept, or where the birds have free access to more than one building on a particular holding, from each group of buildings on the holding in which the birds are kept. Faeces may be pooled for analysis up to a minimum of two pools.

The number of sites from which separate faeces samples are to be taken in order to make a pooled sample shall be as follows:

Number of birds kept in a building	Number of faeces samples to be taken in the building or group of buildings on the holding
250-349	200
350-449	220
450-799	250
800-999	260
1 000 or more	300

(b) Five pairs of boot swabs:

Boot swabs used shall be sufficiently absorptive to soak up moisture. Tubegauze 'socks' are also acceptable.

The surface of the boot swab shall be moistened using appropriate diluent (such as 0,8 % sodium chloride, 0,1 % peptone in sterile deionised water, or sterile water).

Walking around shall be done in a manner which will sample representatively all parts of the sector, including littered and slatted areas when slats are safe to walk on. All separate pens within a house shall be included in the sampling. On completion of sampling in the chosen sector, boot swabs must be removed carefully so as not to dislodge adherent material.

The boot swabs may be pooled for analysis into a minimum of two pools.

(c) In cage breeding flocks, sampling may consist of naturally mixed faeces from dropping belts, scrapers or deep pits, depending on the type of house. Two samples of at least 150 g shall be collected to be tested individually:

- (i) droppings belts beneath each tier of cages which are run regularly and discharged into an auger or conveyor system;
- (ii) droppings pit system in which deflectors beneath the cages are scraped into a deep pit beneath the house;
- (iii) droppings pit system in a step cage house when cages are offset and faeces fall directly into the pit.

There are normally several stacks of cages within a house. Pooled faeces from each stack shall be represented in the overall pooled sample. Two pooled samples shall be taken from each flock as described below.

In systems where there are belts or scrapers, these shall be run on the day of the sampling before sampling is carried out.

In systems where there are deflectors beneath cages and scrapers, pooled faeces which has lodged on the scraper after it has been run, shall be collected.

In step-cage systems where there is no belt or scraper system it is necessary to collect pooled faeces from the deep pit.

Droppings belt systems: pooled faecal material from the discharge ends of the belts shall be collected.

2.2.2. Official sampling

(a) Routine sampling shall be as described in point 2.2.1.

(b) Confirmatory sampling following detection of relevant salmonella from sampling at the hatchery shall be carried out as follows.

In addition to the sampling as described in point 2.2.1, the sampling may include a sample of birds taken at random from within each house of birds on the farm, normally up to five birds per house, unless the County Agricultural Office, Directorate of Food Chain Safety and Animal Health deems necessary to sample a higher number of birds. The examination shall consist in a test for research of anti-microbials or of bacterial growth inhibitory effect in samples. A test is considered failed if a positive is found in any of the birds.

In case the presence of relevant salmonella is not detected but anti-microbials or bacterial growth inhibitory effect are, sampling of the flock for relevant salmonella and bacterial growth inhibitory effect shall be repeated until no bacterial growth inhibitory effect is detected, or the breeding flock is destroyed. In the latter case, the breeding flock shall be accounted for as an infected breeding flock for the purpose of the Community target.

(c) Suspect cases

In exceptional cases where the Central Agricultural Office, Food and Feed Safety Directorate has reasons to suspect false negative results at the first official sampling at the holding, a secondary official confirmatory sampling may be performed, composed of faeces or birds (for the detection of salmonella in organs).

In exceptional cases where the National Food Investigation Institute has reasons to suspect false positive sampling performed at the initiative of the operator at the holding, follow-up official sampling may be performed.

3. Examination of the samples

3.1. Preparation of the samples

3.1.1. Boot swabs samples

- (a) carefully unpack the pair of boot swabs (or 'socks') to avoid dislodging adherent faecal material and place in 225 ml BPW which has been prewarmed to room temperature;
- (b) where five pairs of boot swabs are pooled into two samples, place five individual samples into a minimum of 225 ml BPW and ensure that all the samples are totally immersed in the BPW;
- (c) swirl to fully saturate the sample and continue culture by using the detection method in 3.2.

3.1.2. Other faecal material samples

- (a) at the laboratory place each sample (or pooled sample as appropriate) into an equal weight of Buffered Peptone Water and mix gently;
- (b) allow the sample to soften for 10-15 minutes then mix gently;
- (c) immediately after mixing remove 50 g of the mixture and add to 200 ml of Buffered Peptone Water which has been pre-warmed to room temperature;
- (d) continue culture of the sample by using the detection method in 3.2.

3.2. Detection method

The method recommended by the Community Reference Laboratory for Salmonella in Bilthoven, Netherlands, shall be used: the method is a modification of ISO 6579 (2002), where a semi solid medium (MSRV) is used as the single selective enrichment medium. The semi-solid medium should be incubated at $41,5 \pm 1$ °C for $2 \times (24 \pm 3)$ hours.

As regards the boot swabs samples and other faecal material samples referred to in paragraph 3.1., it is possible to pool incubated BPW enrichment broth for future culture. To do that, incubate both samples in BPW as normal. Take 1 ml of incubated broth from each sample and mix thoroughly then take 0.1 ml of the mixture and inoculate the MSRV plates in the usual way.

3.3. Serotyping

At least one isolate from each positive sample shall be typed, following the Kaufmann-White scheme.

4. Results and reporting

A breeding flock shall be considered positive for the purpose of verifying the achievement of the Community target, when presence of relevant salmonella (other than vaccine strains) was detected in one or more faecal samples (or if there is a secondary official confirmation, in the relevant faecal samples or birds organ samples), taken at the holding. This shall not apply in exceptional cases of suspect breeding flocks where salmonella detection at the holding at the initiative of the operator was not confirmed by official sampling.

The cumulative results from sampling and testing in breeding flocks at holding level shall be accounted for, i.e. each breeding flock shall be counted only once irrespective of the number of sampling and testing operations. Positive breeding flocks shall be counted only once, irrespective of the number of sampling and testing operations.

Reporting shall include:

- (a) detailed description of the options implemented for the sampling scheme and the type of samples taken, as appropriate;
- (b) number of existing breeding flocks and those tested;
- (c) results of the testing;
- (d) explanations on the results, in particular concerning exceptional cases.

7.3. Targets on vaccination or treatment

Vaccination is not compulsory in breeding flocks of *Gallus gallus*. The rules of using vaccination and treatment are laid down in Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry.

8. Detailed analysis of the cost of the programme

Costs related to	Specification	Number of units	Unitary cost in €	Total amount in €	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis	Test: modified ISO 6579 (2002) using MSRV	57,050	20	1,141,000	yes
	Test: serotyping	1,808	30	54,240	yes
1.2. Cost of sampling	costs of sampling of approx. 670 flocks 17 times during 2008 = 11390 sampling sessions (one session consists the taking of 5 pairs of swabs)	11,390	50	569,500	yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine	Cost of vaccine of approx. 3,000,000 animals two times	6,000,000	0.6	3,600,000	yes
Purchase of treatment	Cost of treatment of approx. 60,000 animals according to Art 2 Of Reg 1177/2006	60,000	0.2	12,000	yes
2.2. Distribution costs	Cost of the distribution (approx. 3,000,000 animals)	3,000,000	0.05	150,000	yes
2.3. Administering costs	Cost of the administration (approx. 3,000,000 animals)	3,000,000	0.1	300,000	yes
2.4. Control costs					
3. Slaughter and destruction					
3.1. Compensation of animals	Cost of compensation of the positive animals approx. 3,000,000x0.3=90,000 animals	90,000	11	990,000	yes

3.2. Transport costs	Slaughtering of infected flocks can only be authorised when meat from these flocks is treated according to specific food safety legislation. Therefore, slaughter is not likely to be performed at regular contracted slaughterhouses, which makes transport costs much higher than usual. approx. 3000000x0.03=90000 animals, 2 kg/animal	180,000	0.04	7,200	yes
3.3. Destruction costs	Cost of destruction of approx. 3000000x0.03=90000 animals, 2 kg/animal	180,000	0.2	36,000	yes
3.4. Loss in case of slaughtering	This loss is estimated to be of a large extent. However, losses due to the early slaughter of the flock and the decreased income due to hatching eggs which could not be produced is very hard to estimate.				
3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)					
4. Cleansing and disinfection	When taking into account the number of flocks (670) and the infection rate (3%), an approximate number of 20 flocks to be cleansed and disinfected can be estimated.	20	500	10,000	yes
5. Salaries (staff contracted for the programme only)	Cleansing and disinfection of an average flock depends on several factors, however an approximate amount of costs is given.				
6. Consumables and specific equipment					
7. Other costs					
TOTAL				6,869,940	yes



**Central Agricultural Office
Animal Health and Animal Welfare Directorate**

HUNGARY

Application

**for Community financing for the national control programme
of Hungary for**

**Salmonella spp.
in broiler flocks of Gallus gallus**

for the year 2009.

30th of April, 2008

1. Identification of the programme

Member State: **Hungary**

Disease: **Infection of animals with zoonotic *Salmonella* spp.**

Animal population covered by the programme: **Broiler flocks of *Gallus gallus***

Year of implementation: **2009**

Reference of this document: **02/1889/2008.**

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Date sent to the Commission: **30th of April, 2008**

2. Historical data on the epidemiological evolution of zoonotic salmonellosis specified in point 1

Monitoring and control programmes for *Salmonella* spp. (*S. enteritidis* and *S. typhimurium*) started in Hungary in 1997 by issuing official guidelines for the poultry sector. The goal of the project was to achieve similar targets as which were set by Council Directive 92/117/EEC. The collection of guidelines were ordered by the Ministry of Agriculture and were prepared by an expert group consisting of both Hungarian experts of various backgrounds (Hungarian Academy of Science, National Food Investigation Institute, Central Veterinary Institute and numerous practicing veterinarians) and experts of the Agri-Livestock Consultant Ltd (W. Edel and C. Wray). The work was financed by the PHARE programme of the European Union under project No. HU 9304-05-02. The programme covered the whole poultry sector in relation of *Gallus gallus*, breeding flocks, hatcheries, broiler flocks, table egg producing layer flocks, egg packaging and distribution establishments, poultry slaughterhouses, cutting plants as well as feed mills. The guidelines stated clearly that there is an urgent need for centralised official administrative measures in the form of a ministerial decree by the Minister of Agriculture.

The first decree was created in the year 2002: Decree 49/2002. (V. 24.) of the Minister of Agriculture and Rural Development on protection against salmonellosis and poultry typhus and on retaining officially free status, and was modified by the Decree 97/2003. (VIII. 19) Minister of Agriculture and Rural Development. A new Decree was created and came into force on the 7th of January, 2008, and can be referred to as Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis (hereinafter: "Decree"). The aim of creating the new Decree was to ensure compliance with the changes in the Community legislation.

The Decree sets the conditions of the obligatory control measures in breeding, laying flocks and voluntary (mandatory from 2009) measures in broiler flocks of *Gallus gallus* against specified *Salmonella* serotypes. As a prerequisite, there is an obligation of the holdings keeping broiler flocks of *Gallus gallus* to be registered by the State Veterinary Service. Results of testing required by the Decree are also to be notified to the Directorates of Food Chain Safety and Animal Health of County Agricultural Office (formerly named: County Animal Health and Food Control Station).

The baseline study of the prevalence of *Salmonella* spp. in broiler flocks of *Gallus gallus* carried out according to Commission Decision 2005/636/EC shows that infection of broiler flocks for *Salmonella enteritidis* and *Salmonella typhimurium* is 8,1%. According to monitoring tests carried out infection with *Salmonella infantis* is 58,3% (87% of the *Salmonella* infection is *Salmonella infantis*). The Community target which is set by Commission Regulation No 646/2007 (EC) Art. (1) of flocks of broilers remaining positive of *Salmonella enteritidis* and *Salmonella typhimurium* is 1% or less by 31 December 2011. This goal can only be achieved by a rigorous control programme using extensive professional and financial resources.

3. Description of the submitted programme

The main objective of the programme is to comply with existing Community legislation to achieve Community prevalence targets within the defined time period available as regards broiler flocks of *Gallus gallus* in the territory of Hungary. The European legislation set targets of *Salmonella enteritidis* and *Salmonella typhimurium* (according to Commission Regulation No 646/2007 (EC)), with effect from 84 months after entry into force of Regulation (EC) No 2160/2003 of the European Parliament and of the Council, fresh poultry meat from broiler flocks of *Gallus gallus* may not be placed on the market for human consumption unless absence of *Salmonella* in 25 grams. As *Salmonella infantis* is the most common *Salmonella* in broilers in Hungary, as a national target, national control programme shall cover *Salmonella infantis* in broilers as well.

All broiler flocks of *Gallus gallus* included in the programme are registered in the territory of Hungary.

Laboratories involved in the programme must be accredited by the National Accreditation Body (NAT) and supervised by the National *Salmonella* Reference Laboratory (NRL) of the Republic of Hungary (Food and Feed Safety Directorate, Central Agricultural Office) The NRL will be in charge of coordination of the laboratories, the use of appropriate laboratory methods as well as for co-operation with the Community Reference Laboratory in Bilthoven (NL).

4. Measures of the submitted programme

4.1. Summary of measures under the programme of the broiler flocks

Duration of the programme:

First year: 2009

Last year: 2011

Control

Control/Eradication

- Testing
- Slaughter of positive animals
- Killing of positive animals
- Vaccination
- Treatment
- Disposal of products

- Testing
- Slaughter of positive animals
- Killing of positive animals
- Extended slaughter or killing
- Disposal of products

Monitoring or surveillance

Other measures (*specify*): –

4.2. Designation of the central authority charged with supervising and coordinating the departments responsible for implementing the programme:

All holdings must be registered at the district veterinary office. The official senior veterinary officer keeps and updates the record of holdings participating the programme. The official senior veterinary officer also declares the status of the holdings according to their actual serological status.

The 19 Directorates of Food Chain Safety and Animal Health of County Agricultural Offices coordinate and supervise the programme in their territory. They are required to annually report the actual status of the programme to the Animal Health and Animal Welfare Directorate of the Central Agricultural Office.

Name: Central Agricultural Office
Animal Health and Animal Welfare Directorate
Name in Hungarian: Mezőgazdasági Szakigazgatási Hivatal Központ
Állatgészségügyi és Állatvédelmi Igazgatóság
Address: 1149 Budapest, Tábormok u. 2., Hungary
Tel.: +36-1-460-6300
Fax: +36-1-222-6065

4.3. Description and delimitation of the geographical and administrative areas in which the programme is to be implemented:

The programme will be implemented on the whole territory of Hungary.

4.4. Measures implemented under the programme

4.4.1. Measures and terms of legislation as regards the registration of holdings:

Paragraph 3. (3) f) of Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis states that all holdings must be registered.

4.4.2. Measures and terms of legislation as regards the identification of animals: –

4.4.3. Measures and terms of legislation as regards the notification of the disease:

According to the National Control Program:

"If the salmonella test result is positive, the laboratory immediately informs the competent County Agricultural Office and the operator concerned, and simultaneously sends the isolated salmonella stock together with a sample accompanying document complying with the template issued by Central Agricultural Office to the national reference laboratory operated by the Food and Feed Safety Directorate of Central Agricultural Office for testing and serotyping purposes. The copy of the accompanying document must be kept by the testing laboratory for 3 years."

4.4.4. Measures and terms of legislation as regards the measures in case of a positive result:

By 1 January 2009, Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis will be amended to cover all of the measures to be taken in case of a positive result in broiler flocks. It will include the measures which are now detailed in the national control program as follows:

"If during serotyping the national reference laboratory finds infection with *Salmonella enteritidis*, *Salmonella typhimurium* or *Salmonella infantis*, and the flock concerned has an official salmonella free certificate, the official senior veterinary officer immediately withdraws it. The official certificate of the other flocks of the farm may be simultaneously withdrawn, if the isolation of the infected flock is not fully guaranteed.

In case of a positive test result, at the request of the operator a repeated test may be made. Repeated sampling must be made after 2 weeks from the previous sampling, and it may be made by the national reference laboratory. In case the infection is overcome by the animals during 2 weeks without the use of antibiotics, which is confirmed by the negative result of the repeated test, the official senior veterinary officer issues the official salmonella free certificate.

After emptying the keeping place of the infected flock cleansing and stringent disinfection must take place as well as rodent and insect control in accordance with legislation in force. The remaining bedding must be disposed in accordance with the relevant legal rule.

After taking these necessary steps, laboratory tests shall be carried out to control the efficiency of measures taken.

Restocking into the airspace concerned is permitted by the competent County Agricultural Office only if the efficiency of disinfection is found satisfactory on the basis of the laboratory test, and the operator has settled all costs of the test.

The presence of salmonella species in the feed of the infected flock must be immediately tested in accordance with the relevant legal rule. The feed may be given only to the infected flock until the test is closed with a negative result. If the feed is found infected it must be disposed in accordance with the relevant legal rule, and facilities used for its storage and transportation must be disinfected. A separate test must be made for the detection of salmonella at the feed operator supplying the feed if infection is found.

The operator revises the contingency plan within 30 days from receiving the positive test result and submits it to the competent County Agricultural Office for re-approval. The contingency

plan must contain revision of the hygienic conditions, particularly of the disinfection procedures and the efficiency of rodent control, the test results relating to the potential causes of the infection, and also the list of measures considered necessary. The plan is evaluated by the competent County Agricultural Office. In case the plan is found unsatisfactory by County Agricultural Office, it calls upon the operator to modify it.

If the operator does not have an approved plan within 30 days from the warning, the competent County Agricultural Office considers the flock as if it does not take part in the program for protection against salmonellosis. Such flocks is not able to get officially salmonella free certificate.”

4.4.5. Measures and terms of legislation as regards the different qualifications of animals and herds:

See point 4.4.4.!

4.4.6. Control procedures and in particular rules on the movement of animals liable to be affected or contaminated by a given disease and the regular inspection of the holdings or areas concerned:

See point 4.4.4.!

4.4.7. Measures and terms of legislation as regards the control (testing, vaccination, ...) of the disease:

- Regulation (EC) No. 2160/2003. of the European Parliament and of the Council on the control of Salmonella and other food-borne zoonotic agents
- Commission Regulation (EC) No 646/2007 of 12 June 2007 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Community target for the reduction of the prevalence of Salmonella enteritidis and Salmonella typhimurium in broilers and repealing Regulation (EC) No 1091/2005
- Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry
- Veterinary Act No. CLXXVI. of 2005
- Decree No. 2/2008. (I. 4.) of Minister of Agriculture and Rural Development
- Decree No. 41/1997. (V. 28.) of Minister of Agriculture (Code of veterinary rules)

4.4.8. Measures and terms of legislation as regards the compensation for owners of slaughtered and killed animals:

- Veterinary Act No. CLXXVI. of 2005

5. General description of the costs and benefits:

Costs are calculated based on estimation and information of the Poultry Product Board of Hungary. In case of broiler flocks, costs will occur from the intensive sampling of the flocks as well as the tests performed on the samples (including testing on initiative of both the operator and the veterinary authority), the measures to be applied in the case of infection with *S. enteritidis* and *S. typhimurium* (slaughter or killing of the flock, condemnation, transportation, cleaning and disinfection) as well as financial losses due to decreased income for the poultry industry.

A detailed description of the costs is listed under point 8.

Benefits in case of the successful programme include improved food safety which contributes largely to the achievement of public health goals of the Community.

6. Data on the epidemiological evolution during the last five years

As the control programme will be started by 1st of January, 2009, evolution data are not yet available.

7. Targets

7.1. Targets related to testing

7.1.1. Targets on diagnostic tests

Number and specification of tests

Mandatory testing will be performed in all registered broiler flocks of *Gallus gallus*. A preliminary calculation was made on the approximate number of tests to be performed in the flocks. The number of tests calculated is based on the total of flocks containing more than 2000 hens (1056 flocks at the moment according to the national register) and the testing scheme as provided for in Commission Regulation No 646/2007 of 12 June 2007 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards Community target for the reduction of the prevalence of *Salmonella enteritidis* and *Salmonella typhimurium* in broilers and repealing Regulation (EC) No 1091/2005.

Broiler flocks are kept usually until the age of 42 days (depending on the technology). As cleansing take place after every flock, each year 6 flocks can be reared in a certain airspace in average. The Regulation requires all relevant broiler flocks to be tested 3 weeks before leaving for the slaughterhouse.

Given that in Hungary there are 1056 broiler flocks, the total number of samples to be taken is $1056 \times 6 = 6336$ samples. (As according to Commission Regulation (EC) No 646/2007 at least two pairs of boot/sock swabs shall be taken and all boot/sock swabs must be pooled into one sample.)

In addition, when a flock is tested positive, confirmatory sampling will take place. Based on the baseline study data, 8.1% of the flocks are infected with *Salmonella enteritidis* or *Salmonella typhimurium*. Consequently, in 8.1% of the 1056 flocks (in 85 flocks) confirmatory tests will be required. That gives another 85 samples to be tested.

Summarily, $6336 + 85 = 6421$ samples are expected to be tested for the detection of *Salmonella* spp.

Serotyping will be performed from each positive isolate. Positivity is expected to be detected in 8.1% of regular samples ($6336 \times 0.081 = 513$) and in 100% of the confirmatory samples (85), which makes a total of $513 + 85 = 598$ samples.

However, an exact number of tests, which will be performed, is not possible, because not every operator rears the same amount of flocks every year.

Approximately 120,000,000 broilers are slaughtered in Hungary a year. Meat originated from *Salmonella* infected flocks will not be purchased by meat processing plants, therefore compensation is required ($120,000,000 \times 0,081 \times 1,6 \text{ €}$; about 1,6 € is the price of a broiler to be slaughtered).

7.2. Testing scheme

1. Frequency and status of sampling

- (a) The sampling frame shall cover all flocks of broilers covered by the scope of Regulation (EC) No 2160/2003.
- (b) Flocks of broilers shall be sampled on the initiative of the food business operator and by the competent authority.
 - Sampling on the initiative of the food business operator shall take place in accordance with Article 5(3) of Regulation (EC) No 2160/2003 within three weeks before the birds are moved to the slaughterhouse.
 - Sampling by the competent authority shall include each year at least one flock of broilers on 10 % of the holdings with more than 5 000 birds. It shall be done on a risk basis each time the competent authority considers it necessary.A sampling carried out by the competent authority may replace the sampling on the initiative of the food business operator.
- (c) However, by way of derogation from point (a), the competent authority may decide to sample at least one flock of broilers per round on holdings with several flocks if:
 - (i) an all in/all out system is used;
 - (ii) the same management applies to all flocks;
 - (iii) feed and water supply is common to all flocks;
 - (iv) during one year and at least six rounds, *Salmonella* spp were tested according to the monitoring scheme set out in point (b) in all flocks on the holding and samples of all flocks of at least one round were taken by the competent authority; and
 - (v) all results from the testing for *Salmonella enteritidis* or *Salmonella typhimurium* were negative.

2. Sampling protocol

At least two pairs of boot/sock swabs shall be taken. For free range flocks of broilers, samples shall only be collected in the area inside the house. All boot/sock swabs must be pooled into one sample.

In flocks with less than 100 broilers, where it is not possible to use boot/sock swabs as access to the houses is not possible, they may be replaced by hand drag swabs, where the boot swabs or socks are worn over gloved hands and rubbed over surfaces contaminated with fresh faeces, or if not feasible, by other sampling techniques for faeces fit for the intended purpose.

Before putting on the boot/sock swabs, their surface shall be moistened with maximum recovery diluents (MRD: 0,8 % sodium chloride, 0,1 % peptone in sterile deionised water), or sterile water or any other diluent approved by the NRI, referred to in Article 11 of Regulation (EC) No 2160/2003. The use of farm water containing antimicrobials or additional disinfectants shall be prohibited. The recommended way to moisten boot swabs shall be to pour the liquid inside before putting them on. Alternatively, boot swabs or socks

may be autoclaved with diluents within autoclave bags or jars before use. Diluents may also be applied after boots are put on using a spray or wash bottle.

It shall be ensured that all sections in a house are represented in the sampling in a proportionate way. Each pair should cover about 50 % of the area of the house.

On completion of sampling the boot/sock swabs shall be carefully removed so as not to dislodge adherent material. Boot swabs may be inverted to retain material. They shall be placed in a bag or pot and labelled.

The competent authority shall supervise education of the food business operators to guarantee the correct application of the sampling protocol.

In the case of sampling by the competent authority because of suspicion of *Salmonella* infection and in any other case considered appropriate, the competent authority shall satisfy itself by conducting further tests as appropriate so that the results of examinations for *Salmonella* in flocks of broilers are not affected by the use of antimicrobials in those flocks.

Where the presence of *Salmonella enteritidis* and *Salmonella typhimurium* is not detected but antimicrobials or bacterial growth inhibitory effect are detected, it shall be considered as an infected flock of broilers for the purpose of the Community target.

3. Examination of the samples

3.1. Transport and preparation of the samples

Samples shall be sent by express mail or courier to the laboratories referred to in Articles 11 and 12 of Regulation (EC) No 2160/2003, within 25 hours after collection. At the laboratory samples shall be kept refrigerated until examination, which shall be carried out within 48 hours following receipt.

The pair of boot/sock swabs shall be carefully unpacked to avoid dislodging adherent faecal material, pooled and placed in 225 ml buffered peptone water (BPW) which has been pre-warmed to room temperature.

The sample shall be swirled to fully saturate it and culture shall be continued by using the detection method in point 3.2.

If ISO standards on the preparation of faeces for the detection of salmonella are agreed on, they shall be applied and replace the provisions on the preparation of samples set out in this point.

3.2. Detection method

The detection method recommended by the Community reference laboratory (CRL) for salmonella in Bilthoven, the Netherlands, shall be used.

That method is described in the current version of draft Annex D of ISO 6579 (2002): "Detection of *Salmonella* spp. in animal faeces and in samples of the primary production stage".

In that detection method, a semi-solid medium (modified semi-solid Rappaport-Vassiladis medium, MSR/V) is used as the single selective enrichment medium.

3.3. Serotyping

At least one isolate from each positive sample shall be serotyped, following the Kaufmann-White scheme.

3.4. *Alternative methods*

With regard to samples taken on the initiative of the food business operator, the methods of analysis provided for in Article 11 of Regulation (EC) No 882/2004 of the European Parliament and of the Council (1), may be used instead of the methods for the preparation of samples, detection methods and serotyping provided for in points 3.1, 3.2 and 3.3 of this Annex, if validated in accordance with EN/ISO 16140/2003.

3.5. *Storage of strains*

At least one isolated strain per house and per year shall be collected by the competent authority and stored for future phagotyping or anti-microbial susceptibility testing, using the normal methods for culture collection, which must ensure integrity of the strains for a minimum of two years.

4. Results and reporting

4.1. *Calculation of prevalence for the verification of the Community target*

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

Positive flocks of broilers shall be counted only once per round, irrespective of the number of sampling and testing operations and only be reported in the year of the first positive sampling.

4.2. *Reporting*

Reporting shall include:

- (a) the total number of flocks of broilers sampled by the competent authority or by the food business operator;
- (b) the total number of infected flocks of broilers;
- (c) all serotypes of *Salmonella* isolated (including other than *Salmonella enteritidis* and *Salmonella typhimurium*);
- (d) explanations of the results, in particular concerning exceptional cases.

The results and any additional relevant information shall be reported as part of the report on trends and sources provided for in Article 9(1) of Directive 2003/99/EC of the European Parliament and of the Council.

4.3. *Additional information*

At least the following information shall be made available from each flock of broilers tested for analysis at national level or by the European Food Safety Authority at its request:

- (a) sample taken by the competent authority or by the food business operator;
- (b) holding reference, remaining unique in time;

- (c) house reference, remaining unique in time;
- (d) month of sampling.

7.3. Targets on vaccination or treatment

Vaccination is not compulsory in broiler flocks of *Gallus gallus*. The rules of using vaccination and treatment are laid down in Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry.

8. Detailed analysis of the cost of the programme

Costs related to	Specification	Number of units	Unitary cost in €	Total amount in €	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis	Test: modified ISO 6579 (2002) using MSRV	6421	20	128,420	yes
	Test: serotyping	598	30	17,940	yes
	costs of sampling of approx. 1056 flocks, 6 times during 2009 = 6336 sampling sessions and confirmatory sampling 85 (1056 x 0.081) (one session consists of 2 samples)	12,842	50	642,100	yes
1.3. Other costs					no
2. Vaccination or treatment					no
2.1. Purchase of vaccine/treatment					no
2.2. Distribution costs					no
2.3. Administering costs					no
2.4. Control costs					no
3. Slaughter and destruction					
3.1. Compensation of animals	Cost of the compensation of the positive animals, approx. $120,000,000 \times 0.081 = 9,720,000$ animals. Slaughtering of infected flocks can only be authorised when meat from these flocks is treated according to specific food safety legislation. Therefore, slaughter is not likely to be performed at regular contracted slaughterhouses, which makes transport costs much higher than usual, approx. $120,000,000 \times 0.081 = 9,720,000$ animals, 1.8 kg/animal	9,720,000	1.6	15,552,000	yes
3.2. Transport costs	Cost of the destruction approx. $120,000,000 \times 0.081 = 9,720,000$ animals, 1.8 kg/animal This loss is estimated to be of a large extent. However, losses due to the early slaughter of the flock is very hard to estimate.	17,496,000	0.04	699,840	yes
3.3. Destruction costs		17,496,000	0.2	3,499,200	yes
3.4. Loss in case of slaughtering					

3. Slaughter and destruction					
4. Cleaning and disinfection	When taking into account the number of flocks (1056) and the infection rate (8.1%), an approximate number of 85 flocks to be cleansed and disinfected can be estimated. Cleansing and disinfection of an average flock depends on several factors, however an approximate amount of costs is given.	85	500	42,500	yes
5. Salaries (staff contracted for the programme only)					no
6. Consumables and specific equipment					no
7. Other costs					no
	TOTAL			20,582,000	yes



**Central Agricultural Office
Animal Health and Animal Welfare Directorate**

HUNGARY

Application

**for Community financing for the national control programme
of Hungary for**

**Salmonella spp.
in laying flocks of Gallus gallus**

for the year 2009.

30th of April, 2008

1. Identification of the programme

Member State: **Hungary**

Disease: **Infection of animals with zoonotic *Salmonella* spp.**

Animal population covered by the programme: **Laying flocks of *Gallus gallus***

Year of implementation: **2009**

Reference of this document: **02/1889/2008.**

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Date sent to the Commission: **30th of April, 2008**

2. Historical data on the epidemiological evolution of zoonotic salmonellosis specified in point 1

Monitoring and control programmes for *Salmonella* spp. (*S. enteritidis* and *S. typhimurium*) started in Hungary in 1997 by issuing official guidelines for the poultry sector. The goal of the project was to achieve similar targets as which were set by Council Directive 92/117/EEC. The collection of guidelines were ordered by the Ministry of Agriculture and were prepared by an expert group consisting of both Hungarian experts of various backgrounds (Hungarian Academy of Science, National Food Investigation Institute, Central Veterinary Institute and numerous practicing veterinarians) and experts of the Agri-Livestock Consultant Ltd (W. Edell and C. Wray). The work was financed by the PHARE programme of the European Union under project No. HU 9304-05-02. The programme covered the whole poultry sector in relation of *Gallus gallus*, breeding flocks, hatcheries, broiler flocks, table egg producing layer flocks, egg packaging and distribution establishments, poultry slaughterhouses, cutting plants as well as feed mills. The guidelines stated clearly that there is an urgent need for centralised official administrative measures in the form of a ministerial decree by the Minister of Agriculture.

The first decree was created in the year 2002: Decree 49/2002. (V. 24.) of the Minister of Agriculture and Rural Development on protection against salmonellosis and poultry typhus and on retaining officially free status, and was modified by the Decree 97/2003. (VIII. 19) Minister of Agriculture and Rural Development. A new Decree was created and came into force on the 7th of January, 2008, and can be referred to as Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis (hereinafter: "Decree"). The aim of creating the new Decree was to ensure compliance with the changes in the Community legislation.

The Decree sets the conditions of the obligatory control measures in breeding, laying flocks and voluntary (mandatory from 2009) measures in broiler flocks of *Gallus gallus* against specified *Salmonella* serotypes. As a prerequisite, there is an obligation of the holdings keeping breeding flocks of *Gallus gallus* to be registered by the State Veterinary Service. Results of testing required by the Decree are also to be notified to the Directorate of Food Chain Safety and Animal Health of County Agricultural Office (formerly named: County Animal Health and Food Control Station).

The baseline study of the prevalence of *Salmonella* spp. in laying flocks of *Gallus gallus* carried out according to Commission Decision 2004/665/EC showed that infection of laying flocks for *Salmonella enteritidis* and *Salmonella typhimurium* is 33,54%. The Community target which is set by Commission Regulation (EC) No 1168/2006 Art. 1 a) iii for this prevalence is 30% reduction per year in the infected flocks. This goal can only be achieved by a rigorous control programme using extensive professional and financial resources.

3. Description of the submitted programme

The main objective of the programme is to comply with existing Community legislation, to achieve Community prevalence targets within the defined time period available as regards laying flocks of *Gallus gallus* in the territory of Hungary. The programme covers the two zoonotic *Salmonella* serotypes most relevant in relation to public health (*S. enteritidis*, *S. typhimurium*).

Included in the programme are all laying flocks of *Gallus gallus* registered in the territory of Hungary.

Laboratories involved in the programme must be accredited by the National Accreditation Body (NAT) and supervised by the National *Salmonella* Reference Laboratory (NRI) of the Republic of Hungary (Food and Feed Safety Directorate, Central Agricultural Office). The NRI will be in charge of coordination of the laboratories, the use of appropriate laboratory methods as well as for co-operation with the Community Reference Laboratory in Bilthoven (NL).

4. Measures of the submitted programme

4.1. Summary of measures under the programme

Duration of the programme:

First year: 2008

Last year: 2010

Control

Eradication

Testing

Testing

Slaughter of positive animals

Slaughter of positive animals

Killing of positive animals

Killing of positive animals

Vaccination

Extended slaughter or killing

Treatment

Disposal of products

Disposal of products

Monitoring or surveillance

Other measures (*specify*):

- Flocks positive for *S. typhimurium* or *S. enteritidis* will be subject to movement control. As soon as the NRI confirms the infection, the flock shall be sent to isolated slaughter. Meat originating from such flocks may only be authorised for human consumption after meeting all relevant food safety requirements as regards of the Regulation (EC) No. 2160/2003, Annex II, Point E.
- Eggs originating from such flocks may only be marketed according to the Regulation (EC) No. 2160/2003, of the European Parliament and of the Council on the control of Salmonella and other food-borne zoonotic agents Annex II, Point D.1.
- After emptying the relevant holding operators are required to implement proper cleansing and disinfection. Effectiveness of the procedure is controlled by the competent regional animal health authority. Restocking is only authorised, when cleansing and disinfection is deemed to be satisfactory.

4.2. Designation of the central authority charged with supervising and coordinating the departments responsible for implementing the programme:

All holdings must be registered at the district veterinary office. The official senior veterinary officer keeps and updates the record of holdings participating the programme. The official senior veterinary officer also declares the status of the holdings according to their actual serological status.

The 19 Directorates of Food Chain Safety and Animal Health of County Agricultural Offices coordinate and supervise the programme in their territory. They are required to annually report the actual status of the programme to the Animal Health and Animal Welfare Directorate of the Central Agricultural Office.

Name:	Central Agricultural Office Animal Health and Animal Welfare Directorate
Name in Hungarian:	Mezőgazdasági Szakigazgatási Hivatal Központ Állategészségügyi és Állatvédelmi Igazgatóság
Address:	1149 Budapest, Tábormok u. 2., Hungary
Tel.:	+36-1-460-6300
Fax:	+36-1-222-6065

4.3. Description and delimitation of the geographical and administrative areas in which the programme is to be implemented:

The programme will be implemented on the whole territory of Hungary.

4.4. Measures implemented under the programme

4.4.1. Measures and terms of legislation as regards the registration of holdings:

Paragraph 3. (3) 1) of Decree 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis states that all holdings must be registered.

4.4.2. Measures and terms of legislation as regards the identification of animals: –

4.4.3. Measures and terms of legislation as regards the notification of the disease:

According to point 3. a) of Annex 3 to Decree 2/2008 (Protection in breeding flocks of *Gallus gallus*) (hereinafter: "Annex"): "If the salmonella test result is positive, the laboratory immediately informs the competent County Agricultural Office and the operator concerned, and simultaneously sends the isolated salmonella stock together with a sample accompanying document complying with the template issued by Central Agricultural Office to the national reference laboratory operated by the Food and Feed Safety Directorate of Central Agricultural Office for testing and serotyping purposes. The copy of the accompanying document must be kept by the testing laboratory for 3 years."

4.4.4. Measures and terms of legislation as regards the measures in case of a positive result:

According to the Annex:

6. If during serotyping the national reference laboratory finds infection of a *Salmonella* serotype, which is subject to Regulation 1003/2005/EC the place of keeping of animals must be strictly cleaned and disinfected after the production cycle of the flock.
7. a) If during serotyping the national reference laboratory finds infection with *Salmonella enteritidis* or *Salmonella typhimurium*, at the request of the operator a repeated test may be made, although movement restriction of the given flock and its products is ordered by the official senior veterinary officer until the test result is received. Repeated sampling must be made after 2 weeks from the previous sampling, and it may be made only in the national reference laboratory. Antimicrobial test must be simultaneously made. If the infection is overcome by the animals during 2 weeks without the use of antibiotics, which is confirmed by the negative result of the repeated test, the official senior veterinary officer lifts the movement restriction of the flock and its products.
- b) If the result of the repeated test is also positive, or the operator does not request a repeated test, Part D Annex II to Regulation 2160/2003/EC must be followed. The official senior veterinary officer immediately orders movement restriction of the given stock and of its products, and withdraws the official salmonella free certificate. The official certificate of the other flocks of the farm may be simultaneously withdrawn, if the isolation of the infected flock is not fully guaranteed. The concerned flock must be liquidated at the end of its production cycle.
- c) After emptying the keeping place of the infected flock the operator must provide for the cleansing of the keeping place (the building, its facilities and equipment, side-rooms and passageways), and for its stringent disinfection in accordance with the relevant legal rule, as well as rodent and insect control. The rest of bedding must be disposed in accordance with the relevant legal rule. After taking the necessary steps the operator notifies the County Agricultural Office, which controls the efficiency of measures taken.

- d) Restocking into the airspace concerned is permitted by the County Agricultural Office only if the efficiency of disinfection is found satisfactory on the basis of the laboratory test, and the operator has settled all costs of the test.
- e) The presence of salmonella in the feed of the infected flock must be immediately tested in accordance with the relevant legal rule. The feed may be given only to the infected flock until the test is negative. If the feed is found infected it must be disposed in accordance with the relevant rule, and facilities used for its storage and transportation must be disinfected. A separate test must be made for the detection of salmonella at the feed operator supplying the feed if infection is detected.
- f) Within 30 days of the withdrawal of the official Salmonella free certificate, the operator revises its epidemic action plan, and submits it to the competent County Agricultural Office for re-approval. The revised plan must contain revision of the hygienic conditions, particularly of the disinfection procedures and the efficiency of rodent control, the test results relating to the potential causes of the infection, and also the list of measures considered necessary. The plan is evaluated by the County Agricultural Office within 30 days. If the plan is found unsatisfactory that has to be modified.
- g) If the operator hasn't possess an accepted plan within 90 days of the withdrawal of the official salmonella free certificate, the regional organ of the Central Agricultural Office considers the concerned flocks as which are not in the national control program, therefore declares them as having unknown animal health status. Eggs resulting from such stocks may be used for human consumption only after heat treatment in a heat treated egg product making plant - in accordance to Point 2 of Part D of Annex II to Regulation 2160/2003/EC."

4.4.5. Measures and terms of legislation as regards the different qualifications of animals and herds:

See point 4.4.4.!

4.4.6. Control procedures and in particular rules on the movement of animals liable to be affected or contaminated by a given disease and the regular inspection of the holdings or areas concerned:

See point 4.4.4.!

4.4.7. Measures and terms of legislation as regards the control (testing, vaccination, ...) of the disease:

- Regulation (EC) No. 2160/2003, of the European Parliament and of the Council on the control of Salmonella and other food-borne zoonotic agents
- Commission Regulation No. 1168/2006 of 31. July 2006 implementing Regulation No. 2160/2003 as regards a Community target for reduction of prevalence of certain salmonella serotypes in laying flocks of Gallus gallus and amending Regulation (EC) No 1003/2005
- Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry
- Veterinary Act No. CLXXVI. of 2005
- Decree No. 2/2008. (I. 4.) of the Minister of Agriculture and Rural Development on specific rules of protection against salmonellosis
- Decree No. 41/1997. (V. 28.) of the Minister of Agriculture on Code of Veterinary Rules

4.4.8. Measures and terms of legislation as regards the compensation for owners of slaughtered and killed animals:

- Veterinary Act No. CLXXVI. of 2005

5. General description of the costs and benefits:

Costs and benefits are calculated based on estimation and previous year's data and information. In the case of laying flocks costs will occur from the intensive sampling of the flocks as well as the tests performed on the samples (including both testing on the initiative of the operator and the veterinary authority), the measures to be applied in the case of infection (slaughter or killing of the flock, condemnation, transportation, cleaning and disinfection) as well as financial losses due to decreased income for the poultry industry.

A detailed description of the costs is listed under point 8.

Benefits in case of the successful programme include improved food safety which contributes largely to the achievement of public health goals of the Community.

6. Data on the epidemiological evolution during the last five years

As the control programme started by the 1st of January, 2008, evolution data are not yet available.

7. Targets

7.1. Targets related to testing

7.1.1. Targets on diagnostic tests

Number and specification of tests

Mandatory testing will be performed in all laying flocks of *Gallus gallus* during their whole life span. A preliminary calculation was made on the approximate number of tests to be performed in the flocks. The number of tests calculated is based on the total of flocks containing more than 1000 hens (what is 786 at the moment according to the register) and the testing scheme as provided for in the Annex to Commission Regulation No. 1168/2006 of 31. July 2006 implementing Regulation No. 2160/2003 as regards a Community target for reduction of prevalence of certain salmonella serotypes in laying flocks of *Gallus gallus* and amending Regulation (EC) No 1003/2005.

The Annex of the above mentioned Regulation requires all relevant laying flocks to be tested two times during the rearing period and further testing on every fifteenth week during the whole production period.

Laying flocks are kept usually until the age of 72 weeks. The production period begins when the flock is 22 weeks of age. In some cases the production lasts then until the end of the 84th weeks of the life, however when calculating the number of tests to be performed in this programme, this possibility could not be taken into account.

In Hungary, laying flocks are typically kept in cages which makes the taking samples from the houses the most effective way of detecting possible infection (see sampling protocol below).

Using the above numbers and the testing scheme specified in the Regulation, each laying flock will be sampled and tested approximately 7 times during the year. During each sampling time two samples will be taken and sent into the laboratory.

Given that in Hungary there are 786 laying flocks, the total number of samples to be taken in the frame of routine and official sampling is $786 \times 7 \times 2 = 11004$ samples.

In addition, when a flock is tested positive, confirmatory sampling will take place and additional birds selected from the flock. Based on the baseline study data, approximately 34 % of the flocks are infected with one or more of the 2 most relevant *Salmonella* serotypes. This means that in 34 % of the 786 flocks (in 267 flocks) confirmatory tests will be required with the testing. That gives another $267 \times 2 = 534$ to be tested.

As a summary, $11004 + 534 = 11538$ samples are expected to be tested for the detection of *Salmonella* spp.

Serotyping will be performed from each positive isolate. Positivity is expected to be detected in 34% of regular samples ($11004 \times 0.34 = 3741$) and in 100% of the confirmatory samples (534), which makes a total of $3741 + 534 = 4275$ samples.

However, an exact number of tests which will be performed is not possible, because the time when the flock becomes infected can not be predicted.

7.2. Testing scheme

Testing scheme as provided for in the Annex to Commission Regulation No. 1168/2006 of 31. July 2006 implementing Regulation No. 2160/2003 as regards a Community target for reduction of prevalence of certain salmonella serotypes in laying flocks of *Gallus gallus* and amending Regulation (EC) No 1003/2005 will be used.

Details of the testing scheme are the following:

1. Sampling frame

The sampling frame shall cover all flocks of adult laying hens of *Gallus gallus* (laying flocks) referred to in Article 1 of Regulation (EC) No 2160/2003.

2. Monitoring in laying flocks

2.1. Frequency and status of sampling

Laying flocks shall be sampled at the initiative of the food business operator (operator) and by the competent Directorate of Food Chain Safety and Animal Health of County Agricultural Office.

Sampling at the initiative of the operator shall take place at least every fifteen weeks. The first sampling shall take place at the age of 24 ± 2 weeks.

Sampling by the competent authority shall take place at least:

- (a) in one flock per year per holding comprising at least 1 000 birds;
- (b) at the age of 24 ± 2 weeks in laying flocks housed in buildings where salmonella was detected in the preceding flock;
- (c) in any case of suspicion of *Salmonella* Enteritidis or *Salmonella* Typhimurium infection, as a result of the epidemiological investigation of food-borne outbreaks in accordance with Article 8 of Directive 2003/99/EC of the European Parliament and of the Council;
- (d) in all other laying flocks on the holding in case *Salmonella* Enteritidis or *Salmonella* Typhimurium are detected in one laying flock on the holding;
- (e) in cases where the competent Directorate of Food Chain Safety and Animal Health of County Agricultural Office considers it appropriate.

A sampling carried out by the competent authority may replace one sampling at the initiative of the operator.

2.2. Sampling protocol

In order to maximise sensitivity of sampling, both faecal material and the environment shall be sampled at least as provided for in (a) and (b):

- (a) In cage flocks, 2 × 150 grams of naturally pooled faeces shall be taken from all belts or scrapers in the house after running the manure removal system; however, in the case of step cage houses without scrapers or belts 2 × 150 grams of mixed fresh faeces must be collected from 60 different places beneath the cages in the dropping pits.
- (b) In barn or free-range houses, two pairs of boot swabs or socks be taken, without changing overboots between boot swabs.

In the case of sampling by the competent authority, 250 ml containing at least 100 gram of dust shall be collected from prolific sources of dust throughout the house. If there is not sufficient dust, an additional sample of 150 grams naturally pooled faeces or an additional pair of boot swabs or socks shall be taken.

In the case of sampling referred to in point 2.1(b), (c) and (d), the competent authority shall satisfy itself by conduction further tests as appropriate that the results of examinations for salmonella in birds are not affected by the use of antimicrobials in the flocks.

Where the presence of *Salmonella* Enteritidis and *Salmonella* Typhimurium is not detected but antimicrobials or bacterial growth inhibitory effect are it shall be accounted for as an infected laying flock for the purpose of the Community target referred to in Article 1 (2) of Commission Regulation 1168/2006/EC.

3. Examination of the samples

3.1. Transport and preparation of the samples

Samples shall be sent by express mail or courier to the laboratories referred to in Article 11 of Regulation (EC) No 2160/2003, on the day of collection. At the laboratory, samples shall be kept refrigerated until examination, which shall be carried out within 48 hours following receipt.

3.1.1. Boot swab samples

- (a) The two pairs of boot swabs ('or socks') shall be carefully unpacked to avoid dislodging adherent faecal material, pooled and placed in 225 ml Buffered Peptone Water (BPW) which has been pre-warmed to room temperature;
- (b) The sample shall be swirled to fully saturate it and culture shall be continued by using the detection method in 3.2.

3.1.2. Other faecal material and dust samples

- (a) The faeces samples shall be pooled and thoroughly mixed and a 25 gram sub-sample shall be collected for culture.
- (b) The 25 gram sub-sample shall be added to 225 ml of BPW which has been pre-warmed to room temperature.
- (c) Culture of the sample shall be continued by using the detection method in 3.2.

If ISO standards on the preparation of faeces for the detection of salmonella are agreed on, they shall be applied and replace the above provisions on sampling preparation.

3.2. Detection method

The method recommended by the Community Reference Laboratory (CRL) for Salmonella in Bilthoven, the Netherlands, for detection shall be used. This method is described in the current version of draft Annex D of ISO 6579 (2002): 'Detection of Salmonella spp. in animal faeces and in samples of the primary production stage'. In this method, a semi-solid medium (modified semi-solid Rappaport-Vassiladis medium, MSRV) is used as the single selective enrichment medium.

3.3. Serotyping

At least one isolate from each positive sample shall be serotyped, following the Kaufmann-White scheme.

3.4. Alternative methods

With regard to samples taken at the initiative of the operator, the methods of analysis provided for in Article 11 of Regulation (EC) No 882/2004 (1), may be used instead of the methods for the preparation of samples, detection methods and serotyping provided for in point 3 of this Annex, if validated in accordance with EN/ISO 16140/2003.

3.5. Storage of strains

At least the strains isolated from samples collected by the competent authority, shall be stored for future phagotyping or anti-microbial susceptibility testing, using the normal

methods for culture collection, which must ensure integrity of the strains for a minimum of two years.

4. Results and reporting

A laying flock shall be considered positive for the purpose of verifying the achievement of the Community target, where the presence of *Salmonella* Enteritidis and *Salmonella* Typhimurium (other than vaccine strains) was detected in one or more samples in the laying flock. Positive laying flocks shall be counted only once, irrespective of the number of sampling and testing operations and only be reported in the first year of detection.

Reporting shall include:

- (a) the total number of flocks of laying hens tested and the number of laying flocks tested for each status of sampling referred to in point 2.1;
- (b) the total number of infected flocks and the results of the testing for each status of sampling referred to in point 2.1;
- (c) explanations on the results, in particular concerning exceptional cases.

The results referred to in this point and any additional relevant information shall be reported as part of the report on trends and sources provided for in Article 9(1) of Directive 2003/99/EC.

7.3. Targets on vaccination or treatment

According to Commission Regulation (EC) No 1177/2006 vaccination is obligatory in laying flocks of *Gallus gallus*. The rules on using vaccination and treatment are laid down in Commission Regulation (EC) No 1177/2006 of 1 August 2006 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards requirements for the use of specific control methods in the framework of the national programmes for the control of salmonella in poultry.

8. Detailed analysis of the cost of the programme

Costs related to	Specification	Number of units	Unitary cost in €	Total amount in €	Community funding requested (yes/no)
1. Testing					
1.1. Cost of the analysis	Test: modified ISO 6579 (2002) using MSRV	11,538	20	230,760	yes
	Test: serotyping	4,275	30	128,250	yes
1.2. Cost of sampling	costs of sampling of approx. 786 flocks, 7 times during 2009 = 5502 sampling sessions (one session consists the taking of 2 samples)	5502	50	275,100	yes
1.3. Other costs					
2. Vaccination or treatment					
2.1. Purchase of vaccine/treatment	Cost of the vaccine of approx. 4,500,000 animals two times	9,000,000	0.6	5,400,000	yes
2.2. Distribution costs	Cost of the distribution (approx. 4,500,000 animals)	4,500,000	0.05	225,000	yes
2.3. Administering costs	Cost of the administration (approx. 4,500,000 animals)	4,500,000	0.1	450,000	yes
2.4. Control costs					
3. Slaughter and destruction					
3.1. Compensation of animals	Cost of the compensation of the positive animals, approx. 4,500,000x0.34=1,530,000 animals	1,530,000	3.2	4,896,000	yes

3.2. Transport costs	Slaughtering of infected flocks can only be authorised when meat from these flocks is treated according to specific food safety legislation. Therefore, slaughter is not likely to be performed at regular contracted slaughterhouses, which makes transport costs much higher than usual. approx. $4,500,000 \times 0.34 = 1,530,000$ animals, 2 kg/animal	3,060,000	0.04	122,400	yes
3.3. Destruction costs	Cost of the destruction approx. $4,500,000 \times 0.34 = 1,530,000$ animals, 2 kg/animal	3,060,000	0.2	612,000	yes
3.4. Loss in case of slaughtering	This loss is estimated to be of a large extent. However, the losses due to the early slaughter of the flock and the decreased income due to eggs, which could not be produced, are very hard to estimate.				
3.5 Costs from treatment of products (milk, eggs, hatching eggs, etc)					
4. Cleaning and disinfection	When taking into account the number of flocks (786) and the infection rate (34%), an approximate number of 267 flocks to be cleansed and disinfected can be estimated. Cleansing and disinfection of an average flock depends on several factors, however an approximate amount of costs is given.	267	500	133,500	yes
5. Salaries (staff contracted for the programme only)					
6. Consumables and specific equipment					
7. Other costs					
	TOTAL			12,473,010	yes

