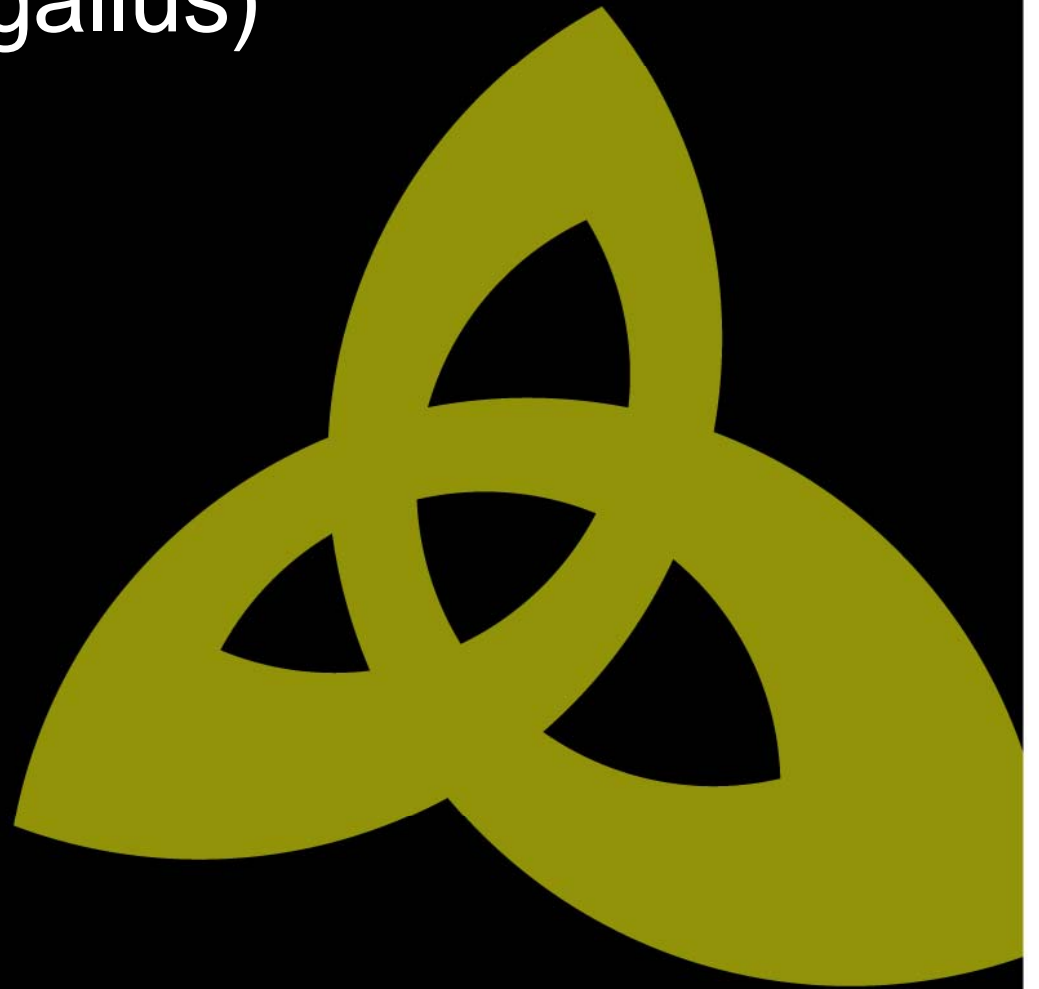


UK National Control Programme for Salmonella in Layers (gallus gallus)

July 2007



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National Control Programme UK – *Salmonella* in LAYERS (*Gallus gallus*)

Aim of the programme

To reduce the prevalence of *Salmonellas* of public health significance in flocks of domestic fowl (*Gallus gallus*) on holdings in the UK producing eggs for human consumption at least to the target levels set out in Regulation (EC) No 1168/2006 which is an annual reduction of at least 10% in the number of positive adult laying flocks compared with the previous year. The starting baseline will be 8.0% for *Salmonella* Enteritidis and *Salmonella* Typhimurium.

1.00 General

1.01 *Salmonellas* have been recognised as important pathogens and *Salmonella* Enteritidis and *Salmonella* Typhimurium have accounted for the majority of cases of human salmonellosis for many years and have consistently been the most commonly implicated pathogens in general outbreaks of foodborne disease.

1.02 A programme for the control of the two most important *Salmonellas* of public health significance, *Salmonella* Enteritidis and *Salmonella* Typhimurium in breeding flocks of *Gallus gallus* has been in operation in the UK since 1989, and in its present form since 1993. As a result of the control programme the number of *Salmonella* Enteritidis and *Salmonella* Typhimurium infected breeding flocks of *Gallus gallus* in the UK is currently very low. Of the other three *Salmonella* serovars, *Salmonella* Hadar, *Salmonella* Infantis and *Salmonella* Virchow, the occurrence is likewise at low levels.

Information was submitted to the Commission relating to the occurrence of *Salmonella* isolates in breeding flocks in the UK in 2004 (SANCO/1143/2005 http://europa.eu.int/comm/food/food/biosafety/Salmonella/impl_req_en.htm).

1.03 The success of the control programme in breeding flocks means that the day old layer chicks placed on farms should be free of *S. Enteritidis* and *S. Typhimurium*.

1.1.0 The occurrence of the zoonosis or zoonotic agent concerned in the Member State.

1.1.1 Laboratory reporting trends – Salmonellosis in humans.

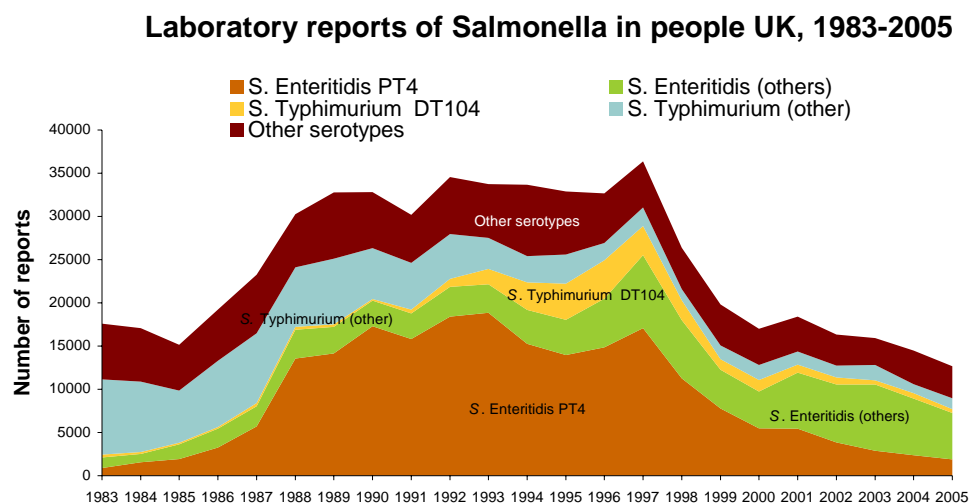
1.1.2 A sharp rise in the incidence of human salmonellosis in the UK was observed in the mid 1980s. This was largely due to an increase in *S. Enteritidis* phage type 4 (PT 4) infection. The incidence of this phage type reached a peak in the early 1990s and remained broadly stable until 1998 when a significant fall was recorded throughout most of the UK which

continued for the next two years. Since then, the decline has continued, albeit less sharply. The reduction in the number of cases of salmonellosis reported in humans continued in 2005 and in the UK as a whole there were 12,831 cases. (See Figure 1). *S. Enteritidis* and *S. Typhimurium* remained the two most common serotypes isolated from humans, accounting for just under 70% of all laboratory confirmed reports.

1.1.3 The Advisory Committee on Microbiological Safety of Food (an expert independent group which advises the Food Standards Agency) considered *Salmonella* in eggs and reported on its findings in May 2001¹ and considered that the widespread vaccination of egg laying flocks against *S. Enteritidis* combined with improved flock hygiene measures had had a significant effect on the prevalence of *Salmonella* contamination of eggs and on salmonellosis in humans. In the UK a voluntary industry operated scheme (British Egg Industry Council) Lion Quality requires its members to vaccinate their layer flocks and to operate to specified hygiene standards. About 85% of egg production belongs to the Lion Quality scheme. In addition many producers who are not members of the scheme also vaccinate their flocks on a voluntary basis.

1.1.4 *S. Enteritidis* and *S. Typhimurium* may enter the food chain from sources other than eggs. Although *S. Enteritidis* is mainly associated with birds, *S. Typhimurium* is found in other species of livestock.

Figure 1



1.1.5 Overall, there is little regional variation in salmonellosis in humans in the UK as illustrated below with a more detailed summary of the situation according to region or country.

England and Wales.

1.1.6 The incidence of salmonellosis has been declining since 1997 when a total of 31480 laboratory confirmed cases were reported to national

¹Second report on *Salmonella* in eggs (2001) (ISBN 0-11-322466-4)

surveillance. In 2005 the annual total fell to 11529 cases, of which 58% were due to *S. Enteritidis*. The decline in salmonellosis has been mainly driven by a decline in the incidence of *S. Enteritidis* PT 4 which has fallen from over 15000 reports in 1997 to 1773 reports in 2005. *S. Typhimurium* remains the second most commonly isolated serotype in humans accounting for 13% of all laboratory confirmed cases of salmonellosis recorded in 2005. There has also been a pronounced downward trend in the incidence of *S. Typhimurium* which has declined from 6554 cases in 1995 to 1488 cases in 2005. During this period the incidence of *S. Typhimurium* DT104 also fell from 3646 to 380 cases per year.

Scotland.

1.1.7 Laboratory reports of salmonellosis increased from 2015 in 1986 to 3349 in 1997. Since then the numbers have declined. In 2005 1127 cases were reported, compared with 1143 in 2004.

Northern Ireland.

1.1.8 The number of reports of *Salmonella* received in 2005 was 175, a decrease of 61% compared to 2004. The large number reported in 2004 was due to 3 outbreaks associated with 228 cases; no outbreaks were reported in 2005. The 2005 annual total is the lowest reported since 1993. Reports of *S. Enteritidis* have decreased slightly each year between 2002 and 2005 with 83 reports being received in 2005 (98 in 2002). Unlike other parts of the UK, Northern Ireland has not experienced an increase in reports of non-PT4 *S. Enteritidis*. In 2005 laboratory reports of *S. Typhimurium* fell in Northern Ireland from 146 to 33 and reports of *S. Typhimurium* DT 104 fell from 95 to 4. There was one large outbreak in 2004 which accounted for the increase in that year; in 2003 there were 43 and 10 laboratory reports of *S. Typhimurium* and *S. Typhimurium* DT104 respectively. Of the 175 *Salmonella* reports received in 2005, 55 (31%) were thought to have been acquired outside the UK.

1.1.9 The number of reports of *Salmonella* in humans referred to above in England, Wales, Scotland and Northern Ireland, include cases which were acquired outside the UK.

1.1.10 The top ten laboratory confirmed *Salmonella* serotypes isolated from people in the UK in 2003 and 2004 are given in Annex 1. The most common serotypes from humans in 2005 are given in Table 1.

Table 1 Top laboratory confirmed *Salmonella* serotypes isolated from people, UK 2005.

England & Wales		Scotland		Northern Ireland	
Serotype	Rate per 100,000	Serotype	Rate per 100,000	Serotype	Rate per 100,000
S. Enteritidis	12.5	S. Enteritidis	10.30	S. Enteritidis	4.85
<u>of these PT4</u>	<u>3.33</u>	<u>of these PT4</u>	<u>2.26</u>	<u>of these PT4</u>	<u>0.76</u>
S. Typhimurim	2.7	S. Typhimurium	4.04	S. Typhimurium	1.93
<u>of these DT104</u>	<u>0.7</u>	<u>of these DT104</u>	<u>1.69</u>	<u>of these DT104</u>	<u>0.23</u>
S. Virchow	0.62	S. Goldcoast	0.81	S. Virchow	0.35
S. Newport	0.33	S. Virchow	0.77	S. Goldcoast	0.23
S. Stanley	0.29	S. Newport	0.43	S. Saint-paul	0.23
S. Hadar	0.29	S. Saint-paul	0.41	S. Kentucky	0.18
S. Infantis	0.22	S. Hadar	0.35	S. Kottbus	0.18
S. Goldcoast	0.22	S. Stanley	0.30	S. Meunchen	0.18
S. Kentucky	0.19	S. Corvallis	0.28		
S. Agona	0.14	S. Agona	0.26		

1.2.0 Laboratory reporting trends – *Salmonella* in layers.

1.2.1 There is currently no statutory monitoring programme for *Salmonella* in laying hens in the UK producing eggs for human consumption. All laboratories which isolate *Salmonella* from a laying flock or its environment are required to report the finding and supply the isolate to the National Reference Laboratory (NRL). This information is recorded and analysed. The number of reports made depends on the level and sensitivity of monitoring which is undertaken by the producers. The reports provide useful information on the serovars which are most common in the birds, and indicate trends.

1.2.2 Over the last three years the number of incidents concerning the invasive types of *Salmonella* in laying hens has been low.

Layers 2005 (routine reporting from laboratories).

1.2.3 In layers there were 42 incidents with 17 *S. Enteritidis*, and 3 incidents of *S. Typhimurium* recorded in Great Britain during routine monitoring carried out by the industry and private veterinarians. Advice was given to the operators on control of *Salmonella* and the codes of good practice to help control the introduction of *Salmonella* and its spread.

1.2.4 The current system of voluntary monitoring and the requirement of laboratories to report positive findings does not give information on the number of holdings or flocks sampled. It is not possible therefore from these

figures to establish the prevalence of *Salmonella* in layer flocks, but the information does give valuable information on the serotypes which are most commonly found in layers, and the trends in these from year to year. In addition all *Salmonella* isolates are phage typed and tested for sensitivity against a panel of 16 antimicrobials in the monitoring programme which provides information on trends. A better measure of the prevalence was obtained from the survey carried out to set a baseline for *Salmonella* in layer flock holdings according to Decision (EC) No 2004/665.

Layer survey 2005 (Decision 2004/665).

1.2.5 The study was conducted according to the protocol in Decision 2004/665.

1.2.6 The raw data were forwarded to the Commission for analysis by the European Food Safety Authority (EFSA). An analysis of the UK data was carried out by the National Reference Laboratory (NRL). Small differences in the results of the two analysis may be expected due to inclusion or exclusion of certain data, and the methods of data analysis. In the analysis by the NRL of the 454 holdings that were sampled in the survey, 55 tested positive for *Salmonella* on one or more samples giving an estimated holding level prevalence of *Salmonella* on UK layer farms of 11.9% (CI95% 9.5 -14.3%). Within these 55 positive holdings, 18 different serovars were identified. More than one serovar was isolated on seven of the holdings. No holding was found to have both *S. Enteritidis* and *S. Typhimurium* together. *S. Virchow* and *S. Infantis* were each found on a single holding, while *S. Hadar* was not found on any holdings. *S. Enteritidis* was isolated from 28 of the 454 holdings giving a weighted prevalence of 5.8% (CI95% 4.2 - 7.4%). *S. Typhimurium* was isolated from 8 holdings and the estimated prevalence of this serovar was 1.8% (CI95% 0.8-2.9%).

1.2.7 All isolates of *S. Enteritidis*, *S. Typhimurium*, *S. Virchow* and *S. Thompson* were phage typed. The two typable isolates of *S. Thompson* were phage type 2 while the single typable *S. Virchow* isolate was PT57. The most common *S. Enteritidis* phage type was PT4, which was isolated from over half of the positive holdings. PT35 and PT6 were also found frequently and were present in more than one quarter of the infected holdings. *S. Typhimurium* definitive phage type DT104 was identified on four of the eight infected holdings.

1.2.8 This was the first survey carried out to this protocol so it is not possible to compare directly with the prevalence in previous years, but other information, such as the decline of *S. Enteritidis* in human cases since the mid 1990's, would suggest that the level in layers has been declining in the past five to ten years.

Layers 2004 (routine reporting from laboratories).

1.2.9 In layers there were 10 incidents of *S. Enteritidis*, and 6 incidents of *S. Typhimurium* recorded in Great Britain. In Northern Ireland during 2004 there was one outbreak of *S. Enteritidis* in a commercial laying flock. There were no clinical signs of disease in the birds. All testing carried out by Department

for Agriculture and Rural Development, Northern Ireland (DARDNI) at the hatchery, as part of the disease investigation, was negative for *S. Enteritidis*.

Layers – 2003 (Routine reporting from laboratories).

1.2.10 The number of reported incidents in layer flocks at 61 was a marked increase on the 9 reported in 2002, which had been similar to the 8 in 2001. The increase may reflect enhanced monitoring of this sector of the industry in 2003. Twenty-three of the reports were *S. Enteritidis*, and two were *S. Typhimurium*. Of the rest 27 incidents were *S. Montevideo*, 3 *S. Brandenburg*, and there were single incidents of *S. Braenderop*, *S. Agama*, *S. Havana*, *S. Senftenberg*, *S. Ohio*, and one incident where only the structure could be determined.

1.3.0 *Salmonella* control programme in Layer flocks of *Gallus gallus* in the UK.

1.3.1 A national control programme will be implemented to comply with Regulation (EC) No 2160/2003 and Regulation (EC) No 1168/2006. The national control plan for *Salmonella* in layers is planned to come into effect in January 2008.

1.3.2 All layer flocks of 350 birds or more will be included in the national control programme. There is a requirement for these flocks to register with the Competent Authority as required by Registration of Establishments (Laying Hens) (England) Regulations 2003, and the equivalent legislation in Wales, Scotland and Northern Ireland. The Regulation (EC) No 2160/2003 excludes producers supplying small quantities direct to the final consumer. Any producers with less than 350 birds who are not exempted in Regulation (EC) No 2160/2003 under Article 1.3 will be included in the national control programme.

1.3.3 The GB Poultry Register has been set up for disease control purposes, specifically avian influenza, and contains the locations of all flocks of *Gallus gallus* with more than 50 birds. The Poultry Register covers England, Wales and Scotland. There is a separate Poultry Register in Northern Ireland. Currently the UK Poultry Register may not be used for disease control purposes other than avian influenza without the agreement of those on the database. It may be possible for the database to be used for *Salmonella* control purposes in the future.

1.3.4 Operators will be required to implement the sampling programme in Annex IIB of EC Regulation 2160/2003. Samples for the detection of *Salmonella* will be taken from *Gallus gallus* day-old chicks to be reared for the production of eggs for human consumption, approximately 2 weeks before the birds come into lay, or before being moved to laying accommodation, and then at 15 weeks intervals during the egg laying phase, with the first sample taken when the birds are 22 to 26 weeks of age. The operator of the flock will take these samples. Samples will be submitted to a laboratory authorised by the Competent Authority and which applies quality assurance systems that conform to the requirements of the current EN/ISO standard. Sampling to

verify the achievement of the target will be as detailed in the Annex to Commission Regulation (EC) No 1168/2006.

1.3.5 When an official sample is taken it may replace the sample required to be taken by the operator.

1.4.0 The geographical area in which the programme will be implemented.

1.4.1 The National Control Programme will be implemented throughout the UK and will cover all flocks of *Gallus gallus* producing eggs for human consumption. Small flocks that supply eggs for private domestic use or small quantities of eggs direct to the final consumer may be excluded from the National Control Programme as permitted in Regulation (EC) No 2160/2003 Article 1.3.

1.5.0 The structure and organisation of the relevant Competent Authorities.

1.5.1 The Competent Authority for this National Control Programme in respect of EC Regulation 2160/2003 for the control of *Salmonella* in layer flocks of *Gallus gallus* is:

Department for Environment, Food and Rural Affairs, 1A Page Street, London, SW1P 4PQ.

- In Northern Ireland the operation of the Control Programme is under Department of Agriculture and Rural Development (DARD).
- The programme in Wales operates with the collaboration of the Welsh Assembly.
- The programme in Scotland operates with the collaboration of the Scottish Executive Environment and Rural Affairs Department.

1.5.2 The Competent Authority in respect of Regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules is the

- Food Standards Agency, Aviation House, Holborn, London.

1.5.3 Further information on the Food Standards Agency is given in Annex 3.

1.5.4 With reference to the slaughter of laying flocks at the end of lay the Meat Hygiene Service is an Executive Agency of the Food Standards Agency and is responsible for the protection of public health and animal health and welfare in Great Britain, through proportionate enforcement of legislation in licensed meat premises. Enforcement in licensed premises in Northern Ireland is the responsibility of DARDNI.

1.5.5 In respect of EC Regulation No 183/2005 on feed hygiene, the Competent Authorities are the Food Standards Agency and local authorities (Trading Standards Departments and some Environmental Health Services).

1.5.6 Defra is the Competent Authority in respect of the rules on the Marketing of Eggs (Council Regulation (EEC) No 1907/90 of 26 June 1990 on certain marketing standards for eggs, Commission Regulation (EC) No 2295/2003 of 23 December 2003 introducing detailed rules for implementing Council Regulation (EEC) No 1907/90 on certain marketing standards for eggs, and from 01 July 2007 Council Regulation (EC) No 1028/2006 of 19 June 2006 on marketing standards for eggs) administered and enforced by the Egg Marketing Inspectorate (EMI) in England and Wales. The equivalent body in Scotland is Eggs and Poultry Unit (EPU) of Scottish Executive Environment and Rural Affairs Department and in Northern Ireland the function is the responsibility of Quality Assurance Branch, (DARD).

1.6.0 Approved laboratories where samples collected within the programme are analysed.

1.6.1 Official samples collected within the National Control Programme are analysed by the National Reference Laboratory for *Salmonella*, Veterinary Laboratories Agency, Weybridge, or at one of the regional laboratories of the Veterinary Laboratories Agency under its control. For samples in Northern Ireland the National Reference Laboratory is The Agri-Food & Biosciences Institute (AFBI), AFBI Headquarters, Newforge Lane, Belfast BT9 5PX. The AFBI was created on 01 April 2006 as an amalgamation of the Department of Agriculture and Rural Development (DARD) Science Service and the Agricultural Research Institute of Northern Ireland (ARINI). AFBI is a DARD Non-Departmental Public Body (NDPB).

1.6.2 Samples which are taken by the operator of the layer flock may be sent to a laboratory approved for the testing of *Salmonella* in samples taken in the national control programme. These laboratories are currently inspected and approved by the national reference laboratories and undertake proficiency testing.

1.6.3 Laboratories may also be authorised to test samples taken under the Animal By-Products Regulations 2005 which make provision for the administration and enforcement of Regulation (EC) No 1774/2002 of the European Parliament and of the Council laying down health rules concerning animal by-products not intended for human consumption (OJ No. L273, 10.10.2002, p1.). It requires operators of rendering plants to test samples of rendered animal protein that is intended for use in animal feedingstuffs for *Salmonella*. The feeding of processed animal protein to farmed animals is also covered by the TSE Regulations 2002 (as amended) which makes provision for administration and enforcement of certain Community legislation in relation to TSE. Under the terms of these Regulations only fishmeal tested under the Animal By-Products Regulations can be fed to poultry.

1.6.4 The laboratories which are authorised by Defra or its agent are required to report findings in the examination of feed materials such as vegetable protein, including the number and type of samples which are examined, the number positive, and to supply the isolate for serotyping on request. The results of these analysis are published each year: www.defra.gov.uk/corporate/vla/science/science-salm-intro.htm

1.6.5 The operators of all laboratories are required to report the isolation of *Salmonella* from any sample taken from livestock (including layer flocks of *Gallus gallus*), their environment, or their feed to the Competent Authority and to provide a sub-culture of the isolate on request under the Zoonoses Order 1989, and the Zoonoses Order (Northern Ireland) 1991.

1.6.6 For food the testing is undertaken by Food Business Operators when complying with the Microbiological criteria regulations Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs. This is carried out according to the specified reference method (ISO 6759).

1.7.0 Methods used in the examination of the zoonoses or zoonotic agent.

1.7.1 Samples taken by operators and samples taken as official controls are tested in accordance with the requirements of Commission Regulation (EC) No 1168/2006 using the method recommended by the Community Reference Laboratory for *Salmonella* in Bilthoven, Netherlands. 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 is incubated at 41,5 +/- 1 °C for 2 x (24 +/- 3) hours.

1.7.2 Samples taken under the Animal By-Products Regulations 2005 which make provision for the administration and enforcement of Regulation (EC) No 1774/2002 of the European Parliament and of the Council laying down health rules concerning animal by-products not intended for human consumption are examined by a method that conforms with—
ISO 6579/2002/BS-EN 12824:1998 (Detection of *Salmonella*) or equivalent,
or
NMKL 71: 1993 or equivalent

1.7.3 The reference method in the microbiological criteria regulation for processed meat is ISO 6579.

1.8.0 Official controls.

1.8.1 One sample will be taken under the control of the Competent Authority for Regulation 2160/2003 from one layer flock on each holding with more than 1000 birds during the period of production of eggs for human consumption as specified in 2.1 of Annex to Commission Regulation (EC) No 1168/2006.

1.8.2 Official samples will include a sample of dust (or when not available an additional sample of faecal material) in compliance with 2.1 and 2.2 of Annex to Commission Regulation (EC) No 1168/2006.

1.8.3 The use of antimicrobials (as defined in Regulation (EC) No 1177/2006) will be checked when the official sample is taken. If the flock is under antimicrobial medication for animal health or animal welfare reasons the flock will be sampled again after the period of withdrawal for the product given in its Marketing Authorisation. Flock owners are required to keep records of antimicrobial use and to make these records available under the Animals and Fresh Meat (Examination for Residues) Regulation 1988 Statutory Instrument 1998 No 848.

1.8.4 The records of samples taken by the operator will be made available for inspection to the Competent Authority or its agent and provide details of date of sample, type of sample, laboratory carrying out the examination, and the result.

1.8.5 The sampling under the Animal By-Products legislation is monitored by the Competent Authorities with inspections carried out using a risk-based approach.

1.8.6 Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs requires poultry abattoirs to undertake microbiological testing for *Salmonella* on 5 samples a week (each sample is 3 neck skins). Establishments producing minced meat, meat preparations and mechanically separated meat must also undertake weekly testing for *Salmonella*. FSA are the Competent Authority which monitors these controls.

1.8.7 The official monitoring of feed controls is described in the section on the structure of the production of feed below and in Annex 4.

1.9.0 Operator/owner's Obligations.

1.9.1 Operator/owners are required to take samples from rearing flocks of *Gallus gallus* intended for the production of eggs for human consumption for the detection of *Salmonella* of public health significance as detailed in Annex II B 1 of Commission Regulation (EC) No 2160/2003 when the chicks are day old, and approximately 2 weeks before the birds come into lay or before being moved to layer accommodation. These samples will be taken as detailed in Annex 2.

1.9.2 Operator/owners are required to take the samples as defined in Commission Regulation (EC) No 1168/2006 in the Annex point 2, Monitoring in Laying Flocks, and submit them to a laboratory which has been authorised by the Competent Authority for the detection of *Salmonella* in a control programme under Commission Regulation (EC) 2160/2003.

1.9.3 The owner shall keep a record of the date when each flock is sampled for *Salmonella*, the identity of the flock sampled, the age of the flock sampled,

the laboratory which undertook the analysis, and the result of the tests and make these records available to the Competent Authority or its agent.

1.9.4 Samples taken as above shall be sent immediately (or may be stored for up to 48 hours in a refrigerator 1-4^o C) to a laboratory authorised by Defra or DARD for the detection of *Salmonella* in Breeding flocks.

1.9.5 Reporting of results.

1.9.6 The person in charge of any laboratories which detects *Salmonella* or an isolate believed to be *Salmonella* in any sample from a layer flock or its environment must notify (under the Zoonoses Order 1989, and the Zoonoses Order (Northern Ireland) 1991) the Competent Authority without delay, and supply information on the type of sample, the name and address of the layer flock, the name and address of the owner/operator, and supply the *Salmonella* isolate or sub-culture to the Competent Authority. The laboratory shall at the same time also advise the person/organisation who submitted the sample the results of the test. In practice the reports are made to the Senior Veterinary Investigation Officer in the local regional laboratory of the Veterinary Laboratories Agency in England and Wales, to the Divisional Veterinary Manager or Officer in Scotland and Northern Ireland respectively.

1.9.7 Under Article 9 of Directive (EC) No 2003/99 the Competent Authority will report the results of the tests carried out each year to the Commission according to the information requested in Regulation 1168/2006 Annex Part 4.

2.0.0 Official controls at other stages of the food chain.

2.0.1 Under the terms of the EC Feed Hygiene Regulation 183/2005 feed businesses must be approved or registered with their Local Authority. Approvals/registrations relate to producers of compound feeds, feed materials, feed additives and premixtures. The Regulation also covers transporters and storers of feed, food companies selling co-products for use as feed and pet food manufacturers. Approval requires a prior-inspection visit by a Local Authority to ensure that the premises are working to the required standards (possibly by taking samples), registration involves the placing of premises on a list with follow-up checks of their activities. Livestock farms growing and using or selling crops for feed use are also within the scope of the Regulation, although those which supply small quantities of primary products to local establishments directly supplying the final consumer (e.g. other producers) are not required to be registered or approved.

2.0.2 The Animal By-Products Regulations 2005 requires operators of rendering plants to test samples of rendered animal protein that is intended for use in animal feedingstuffs for *Salmonella*. The feeding of processed animal protein to farmed animals is also covered by the TSE Regulations 2002. Under the terms of these Regulations only fishmeal tested under the Animal By-Products Regulations can be fed to poultry.

2.1.0 Measures taken by the Competent Authorities with regard to animals or products in which zoonoses or zoonotic agents have been detected.

2.1.1 When a layer flock of *Gallus gallus* is suspected of being infected with *Salmonella* Enteritidis or *Salmonella* Typhimurium the flock will be investigated. The flock is suspected of being infected when *S. Enteritidis* or *S. Typhimurium* is isolated from a sample of faeces, boot swabs, tissue or organs from the birds in the flock, or from dust in the environment. This applies to layer flocks from day old through to end of production.

2.1.2 The Competent Authority will confirm the result of the sample by taking repeat samples in the flock consisting of two pairs of boot swabs per house (or equivalent faeces samples) plus one dust sample of at least 100 g (or equivalent faeces or boot swabs if dust is not available) as defined in Commission Regulation (EC) No 1168/2006 in Annex 2.1. For the purposes of establishing the progress towards the target if *S. Enteritidis* or *S. Typhimurium* is isolated from any such sample the flock is classed as positive.

2.1.3 Isolates of *Salmonella* Enteritidis and *Salmonella* Typhimurium will be examined to determine if they are vaccine strains according to the manufacturer's protocol. If vaccine strains are confirmed in samples the flock will not be classed as positive for the purposes of establishing the progress towards the target.

2.1.4 Official sampling will be carried out under the control of the Competent Authority in all replacement flocks where the previous flock in a building was positive for *S. Enteritidis* or *S. Typhimurium*. This sampling will take place according to Regulation (EC) No 1168/2006 Annex 2.1b.

2.1.5 Official samples will also be taken under the control of the Competent Authority when there is an epidemiological link to a case of human disease in a foodborne outbreak in accordance with Article 8 of Directive (EC) No 2003/99. Arrangements have been put in place to ensure that there is effective and continuous cooperation based on free exchange of general information and, where necessary, of specific data, between the Competent Authority or authorities designated for the purposes of this Directive and the authorities and organisations referred to in Article 1 of Decision No 2119/98/EC:

- Official samples will be taken under the control of the Competent Authority in all other flocks on a holding when *S. Enteritidis* or *S. Typhimurium* is suspected in a flock on the same holding.
- Operators with a flock which is positive for *S. Enteritidis* or *S. Typhimurium* will be contacted by the Competent Authority and the requirement to have eggs from such flocks heat treated in the future will be explained so that action to reduce infection on the holding may be taken. Operators will be invited to contact their veterinary

adviser for advice on how to reduce or eliminate the *Salmonella*. Advice on the control of *Salmonella* in layers will be available from government experts on *Salmonella* control based in the Veterinary Laboratories Agency, State Veterinary Service and DARD. Advice will include recommendations on management, cleaning and disinfection, pest control, biosecurity, monitoring, and the potential use of vaccines.

2.1.6 Arrangements for implementing the specific requirements concerning flocks of laying hens set out in Regulation 2160/2003 Annex II D.

2.1.7 The arrangements are detailed in Annex 7. These arrangements will take effect from January 2010, or according to any new date and arrangements if Annex II D is amended in Community law.

2.2.0 Relevant national legislation.

2.2.1 The following legislation is administered by Defra or the Competent Authorities in the devolved administrations where equivalent legislation is in place.

- Zoonoses Order 1989 and in Northern Ireland, the Zoonoses Order (Northern Ireland) 1991 – requires the person responsible for all laboratories to report the isolation of a *Salmonella* and to provide a sub-culture on request.
- The Animal Health Act, 1981 designates *Salmonella* as a disease of poultry and provides powers for the slaughter of flocks which are confirmed to be infected. In Northern Ireland the Disease of Animals (Northern Ireland) Order 1981 designates *Salmonella* as a disease of poultry and provides similar powers as above.
- The Animal By-Products Regulations 2005 – covers the disposal of animal by-products for the administration and enforcement of Regulation (EC) No 1774/2002 of the European Parliament and of the Council laying down health rules concerning animal by-products not intended for human consumption.
- Registration of Establishments (Laying Hens) (England) Regulations 2003, Registration of Establishments Keeping Laying Hens (Scotland) Regulations 2003 (as amended), The Registration of Establishments (Laying Hens) (Wales) Regulations 2004, and Registration of Establishments (Laying Hens) Regulations (Northern Ireland) 2003 implement Commission Directive 2002/4/EC on the registration of establishments keeping laying hens, covered by Council Directive 1999/74/EC.
- Statutory Instrument 1995 No. 1544 - The Eggs (Marketing Standards) Regulations 1995

www.opsi.gov.uk/si/si1995/Uksi_19951544_en_1.htm which has been amended by Statutory Instruments 1996 No 1725, SI 1997 No 1414, SI 1998 No 1665 and SI 2006/1540.

- Food Safety Act 1990
www.opsi.gov.uk/acts/acts1990/Ukpga_19900016_en_1.htm

2.2.2 The following legislation is administered by the Food Standards Agency:

- Regulation EC No. 852/2004 requires food business operators to 'ensure that primary products are protected against contamination' ['contamination' means the presence or introduction of a hazard].

2.2.3 Further legislation will be introduced or current legislation amended during 2007 to provide a legislative basis for the National Control Plan for Laying Flocks (*Gallus gallus*).

2.2.4 A full consultation on the proposed new legislation will take place in 2007 including a regulatory impact assessment allowing at least 12 weeks for comment from interested parties as required in standard UK procedures for introducing new legislation.

2.3.0 Financial assistance provided to food and feed businesses in the context of the national control programme.

2.3.1 In flocks of *Gallus gallus* being reared for, or producing, eggs for human consumption no financial assistance is provided in the context of the control programme.

2.3.2 No charge is made for the investigations carried out by the Competent Authority when a flock is suspected of being infected with *S. Enteritidis* or *S. Typhimurium*, and no charge is made for the expert and other advice given by the Competent Authorities on the control of *Salmonella*.

2.3.3 The UK is considering application to the Commission for co-financing for certain aspects of the control programme within the terms of Council Decision 90/424 of 26 June 1990 on expenditure in the veterinary field.

2.4.0 Food and Feed businesses covered by the programme.

2.5.0 The structure of the production of the given species and products thereof.

2.5.1 The structure of the laying flocks in the UK is given in Annex 5.

2.6.0 The structure of the production of feed.

2.6.0.1 A number of Competent Authorities are involved in feed law policy and its enforcement. The Food Standards Agency deals with the composition and marketing of animal feeds (including undesirable substances, additives and labelling); Defra (Veterinary Medicines Directorate VMD) which deals with zotechnical and medicated feeds; and Defra animal health and veterinary group, or its equivalent in the devolved administrations, covers processed animal proteins and *Salmonella*.

2.6.0.2 Many low moisture feeds, in particular those derived from cereals, oilseeds and sugar processing industries are widely used in the manufacture of compound feeds and blends. Soya bean and rapeseed meals are major sources of protein. The Animal By-Products Regulations 2005 requires operators of rendering plants to take samples of rendered animal protein (fishmeal) that is intended for use in animal feedingstuffs. The samples must then be tested at an approved laboratory for the presence of *Salmonella*.

2.6.0.3 Only a few feed compounders operate on a national scale manufacturing and distributing compound livestock feeds on a nation-wide basis. Other feed compounders operate on a regional basis. Some feed compounders may be farmer controlled or co-operatives. A number of companies manufacture feeds as part of an integrated process of poultry and egg production.

2.6.1 The structure of the production of food.

2.6.2 At the end of the laying flock production period the birds are slaughtered and may go for human consumption. In accordance with Regulation 853/2004, chicken meat for human consumption must be slaughtered in approved slaughterhouses. There are 127 of these in Great Britain and 7 in Northern Ireland. The enforcement authority in these plants is the Meat Hygiene Service (an executive agency of the Food Standards Agency) in Great Britain and DARD Veterinary Service in Northern Ireland. The industry guide entitled "A guide to the food hygiene and other regulations for the meat industry" sets out the detailed requirements that apply to the slaughter and processing of broilers in such meat plants.

2.6.3 Producers who rear and slaughter on the farm, and who subsequently sell the meat locally or direct to the consumer, are exempt from the detailed requirements of Regulation 853/2004 and thus do not have to slaughter the birds in approved slaughterhouses. The rules that apply to these producers are also set out in the industry guide "A guide to the food hygiene and other regulations for the meat industry". The enforcement authority on these exempt premises is the local food authority. However, the number of producers of laying flocks of *Gallus gallus* who slaughter on farms is thought to be very low.

2.6.4 Eggs sold at retail level within the UK are required to be marked (stamped) with a code identifying the establishment (production site), country of origin and method of production (i.e organic, free range, barn or cage).

2.6.5 Further information on the production of eggs in the UK is available at: www.defra.gov.uk/foodrin/poultry/statistics/

2.7.0 Relevant guides for good animal husbandry practices or other guidelines.

2.7.1 A number of voluntary guides have been produced in collaboration with representatives of the industry on the control of *Salmonella* in poultry production.

Relevant ones are listed in Annex 6, and some are also available on the website at; www.defra.gov.uk/animalh/diseases/zoonoses/salmonella-cop.htm
Hard copies are available on request.

2.8.0 Routine veterinary supervision of farms.

2.8.1 The owner is responsible for the health and welfare of the poultry on the holding, and for ensuring that a veterinarian is consulted on disease and welfare issues as appropriate. The Competent Authority carries out inspections on farms for animal welfare reasons, to take samples for residues, to administer and enforce the legislation on marketing of eggs, and to check medicine records.

2.9.0 Registration of farms.

2.9.1 All poultry breeding flocks of more than 250 birds are registered (Poultry Breeding Flocks and Hatcheries Order 1993). The register is maintained at the local level by the Competent Authority or its agent (State Veterinary Service in Great Britain, DARD in Northern Ireland).

2.9.2 All layer flocks of 350 or more birds are registered under the Registration of Establishments (Laying Hens) (England) Regulations 2003 and equivalent legislation detailed in Paragraph 2.2.0.

2.9.3 A GB Poultry Register and an equivalent register in Northern Ireland detail the locations and numbers of all poultry for the purposes of control of avian influenza. Information on the Register may not be used for other purposes without the flock owner's consent.

3.0.0 Record-keeping at farms.

3.0.1 All laying flock operators are required to keep records of medicine usage, including vaccines, which must be available for inspection.

3.0.2 Records relating to movement of flocks onto and off the holding must be kept.

3.0.3 Records giving details of sampling for *Salmonella* and results will be kept either at the holding or be readily available.

3.1.0 Documents to accompany animals when dispatched.

3.1.1 Operators wishing to export more than 20 birds or hatching eggs to another EU member state (or certain third countries) must comply with EU Directive 90/539/EC and ensure that the consignment is accompanied by a completed and signed Intra-trade Animal Health Certificate (ITAHC) for poultry breeding and production. This can be obtained from a local Animal Health Divisional Office and must be completed and signed by the Official Veterinarian as well as the operator to confirm compliance with the relevant articles of Directive.

3.1.2 The ITAHC will also require the reference number of the operator's poultry health certificate.

3.1.3 The ITAHC will be amended to include the results of the last test for *Salmonella* as required in Commission Regulation (EC) 2160/2003 Article 9.1 prior to any dispatching of the live animals, or hatching eggs, from the food business of origin. The date and the result of testing shall be included in the relevant health certificates provided for in Community legislation.

3.2.0 Other relevant measures to ensure the traceability of animals.

3.2.1 The Poultry Breeding Flocks and Hatcheries Order (England) 2007, and the equivalent legislation when implemented in the devolved administrations in Wales, Scotland and Northern Ireland will require the operators of hatcheries and the keepers of breeding flocks to keep records of poultry or hatching eggs entering or leaving the premises. The records must contain information on the number, date, and origin or destination. These records must be retained for one year and be available to the Competent Authority for inspection. The Diseases of Poultry Order 2003 (and equivalent legislation) extends this requirement to every person who is engaged in the transport or marketing of poultry.

3.2.2 All official veterinary health certificates issued for the export of poultry and hatching eggs are recorded on either the Centaur system or the Trade Control and Expert System (TRACES). Both of these systems allow tracking of exports of live animals and hatching eggs accompanied by veterinary health certification. Centaur creates Export Health Certificates for exports to third countries while TRACES generates ITAHCs issued for intra-Community movements. TRACES is an internet-based service which is owned and maintained by the Commission. It is possible for traders (economic operators) to apply for both Centaur EHCs and TRACES ITAHCs on-line or using paper application forms. Operators wishing to export birds to EU member states can register with TRACES via Defra's website or their local Animal Health Office.

3.3.0 Approved plans from Food Business Operators.

3.3.1 Approval has been granted to plans submitted by the following Food Business Operators.

Name of plan
Food Business Operator
Date of approval

3.3.2 The Commission will be advised of any food business operator plans which have been approved by the Competent Authority.

Annex 1

The top ten laboratory confirmed *Salmonella* serotypes isolated from people UK.

Table 2: The top ten laboratory confirmed *Salmonella* serotypes isolated from people UK 2004 (provisional).

England and Wales		Scotland		Northern Ireland	
Serotype	Rate per 100,000	Serotype	Rate per 100,000	Serotype	Rate per 100,000
S. Enteritidis	15.60	S. Enteritidis	12.00	S. Typhimurium	8.57
S. Typhimurium	2.45	S. Typhimurium	4.23	S. Enteritidis	5.29
of these DT104	0.88	of these DT104	1.56	of these DT104	5.46
S. Newport	1.22	S. Newport	0.69	S. Newport	5.40
S. Virchow	0.51	S. Virchow	0.45	S. Virchow	1.41
S. Stanley	0.25	S. Hadar	0.34	S. Dublin	0.06
S. Braenderup	0.21	S. Montevideo	0.30	S. Bredeney	<0.01
S. Hadar	0.20	S. Braenderup	0.28	S. Ohio	<0.01
S. Agona	0.19	S. Agona	0.22	S. Infantis	<0.01
S. Infantis	0.18	S. Java	0.22	S. Kottbus	<0.01
S. Thompson	0.16	S. Infantis	0.16	S. Montevideo	<0.01

Table 3: The top ten laboratory confirmed *Salmonella* serotypes isolated from people UK 2003

England and Wales		Scotland		Northern Ireland	
Serotype	Rate per 100,000	Serotype	Rate per 100,000	Serotype	Rate per 100,000
S. Enteritidis	18.82	S. Enteritidis	13.92	S. Enteritidis	5.30
S. Typhimurium	3.67	S. Typhimurium	4.11	S. Typhimurium	2.53
of these DT104	1.39	of these DT104	1.00	of these DT104	0.59
S. Virchow	0.47	S. Virchow	0.39	S. Virchow	0.24
S. Hadar	0.40	S. Newport	0.37	S. Infantis	0.24
S. Agona	0.33	S. Infantis	0.37	S. Kottbus	0.24
S. Infantis	0.32	S. Braenderup	0.29	S. Bredeney	0.18
S. Braenderup	0.30	S. Java	0.29	S. Ohio	0.12
S. Java	0.29	S. Agona	0.25	S. Newport	0.12
S. Newport	0.23	S. Montevideo	0.18	S. Dublin	0.12
S. Montevideo	0.14	S. Hadar	0.14	S. Montevideo	0.06

Annex 2

Samples taken by operators during the rearing phase of layers.

Day old

(a) One chick box liner, up to a maximum of 10, for every 500 chicks delivered from each hatchery. Samples taken on the day of arrival.

(b) The carcasses of all chicks, up to a maximum of 60, from each hatchery which are dead on arrival.

2 weeks before entering laying phase

A minimum of 2 pairs of boot swabs per house, or composite faeces sample taken according to the table below.

The number of sites from which separate faeces samples (minimum 1g each) are to be taken in order to make a composite sample shall be as follows:

Number of birds kept in a building	Number of faeces samples to be taken in the building
1-24	Number equal to the number of birds up to a maximum of 20
25-29	20
30-39	25
40-49	30
50-59	35
60-89	40
90-199	50
200-499	55
500 or more	60

Samples to be sent same day to Authorised Laboratory for testing for *Salmonella*. If samples are not dispatched on the day of collection to the laboratory they must be stored at 4⁰ C but not frozen, and must be submitted within 48 hours of collection.

Boot swabs, faeces, and dust samples will be prepared according to the methods outlined in Section 3 of the Annex to Regulation (EC) No 1168/2006.

Monitoring in Laying Flocks by operator

Monitoring by operators shall take place according to Regulation (EC) No 1168/2006 Annex Point 2 Monitoring in Laying Flocks every 15 weeks starting when the birds are 22 – 26 weeks of age.

Laboratory testing 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, MSR/V) is used as the single selective enrichment medium.

Annex 3

The Food Standards Agency.

The Food Standards Agency is an independent Government department set up by an Act of Parliament in 2000 to protect the public's health and consumer interests in relation to food. The Agency is led by a Board that has been appointed to act in the public interest and not to represent particular sectors. Board members have a wide range of relevant skills and experience. Their UK headquarters are in London, but the Agency also has national offices in Scotland, Wales and Northern Ireland.

The Food Standards Agency is accountable to Parliament through Health Ministers, and to the devolved administrations in Scotland, Wales and Northern Ireland for its activities within their areas.

Annex 4
Authorities involved in Feed Law and its Enforcement.

	Policy, Regulation and Implementation of Legislation	Enforcement Legislation
Composition and Marketing of Animal Feeds (undesirable substances, additives, labelling etc)	Food Standards Agency	GB: Local Authorities NI: (Northern Ireland): Department of Agriculture and Rural Development (DARD)
Zootechnical and Medicated Feeds	Defra (Veterinary) Medicines Directorate (VMD) DARD (Animal Health and Welfare Policy Division)	GB: Animal Medicines Inspectorate NI: DARD
Animal Disease related Legislation (BSE, Processed Animal Proteins, <i>Salmonella</i>)	Defra (Animal Health and Veterinary Group) DARD (Animal Health and Welfare Policy Division)	GB: Checks carried out by State Veterinary Service (Defra) Prosecution: Local Authorities NI: DARD
Pesticide Residues	Defra (Pesticides Safety Directorate – PSD) Agri-environmental Policy Division	GB: Pesticides Safety Directorate and Local Authorities NI: DARD

Annex 5

Flocks and Holdings of layer flocks producing eggs for human consumption in UK.

Using census data from 2002/2003 it is estimated that there are approximately 29 million laying birds in the UK; the majority of these are on holdings with more than 30,000 birds. In contrast the majority of holdings have less than 100 birds.

Previous data collected for survey under Commission Decision 2004/665

UK Structure Survey - Laying hens (Gallus gallus) eggs for human consumption

		Number of holdings by number of head present							
Country	TOTAL	1 to 99	100-499	500-999	1000-2999	3000-4999	5000-9999	10000-29999	>=30000
UK	28,544	26,238	920	186	277	178	305	294	148

Structure Survey - Laying hens (Gallus gallus) eggs for human consumption

		Number of laying hens by number of head present							
TOTAL	1 to 99	100-499	500-999	1000-2999	3000-4999	5000-9999	10000-29999	>=30000	
29,751,734	387,830	202,587	134,627	540,177	734,557	2,205,877	4,934,931	20,611,146	

Annex 6

Codes of practice for the control of *Salmonella*.

1. Code of Practice For The Prevention and Control of <i>Salmonella</i> – In Commercial Egg Laying Flocks. Ref No PB 2205
2. Codes of Practice For The Control of <i>Salmonella</i> – For The UK Fish Meal Industry Ref No PB 2203
3. Code of Practice For The Control of <i>Salmonella</i> – In The Production of Final Feed For Livestock In Premises Producing Less Than 10,000 tonnes Per Annum. Ref No 2201
4. Code of Practice For The Control of <i>Salmonella</i> – In the Production of Final Feed for Livestock In Premises Producing Over 10,000 Tonnes Per Annum. Ref No 2200
5. Code of Practice For the Prevention and Control of <i>Salmonella</i> – In Chickens Reared For Meat Ref No 7323
6. Code of Practice For The Control of <i>Salmonella</i> – During the Storage, Handling and Transport of Raw Materials Intended For Incorporation Into, or Direct Use As, Animal Feedingstuff. Ref No 2202
7. Code of Practice For The Control of <i>Salmonella</i> – In Animal By-products Rendering Industry. Ref No 2199
8. Code of Practice For The Prevention of Rodent Infestation In Poultry Flocks – The Control of <i>Salmonella</i> . Ref No 2630
9. Code of Practice For The Prevention and Control of <i>Salmonella</i> – In Breeding Flocks and Hatcheries. Ref No PB 1564
10. Egg Quality Guide Ref No PB 0000
11. Code of Practice The Handling and storage of eggs from farm to retail sale Ref No. PB 2818

See also:

www.defra.gov.uk/animalh/diseases/zoonoses/salmonella-cop.htm

Information on the marketing of eggs is available to the public on the Defra web site at:

www.defra.gov.uk/foodrin/poultry/trade/marketregs/eggmarketregs.htm#gme

Annex 7

Arrangements for implementing the specific requirements concerning flocks of laying hens set out in Regulation 2160/2003 Annex II D.

- 1) **[From 01 January 2010 (or earlier if Regulation 2160/2003 Annex IID is amended)]** When a layer flock of *Gallus gallus* is suspected of being infected with *Salmonella* Enteritidis or *Salmonella* Typhimurium the flock is placed under official control by the Competent Authority. If the flock is in the laying phase no further eggs from the flock may be placed on the market for human consumption unless they have been heat treated in such a way as to eliminate *Salmonella*.
- 2) The Competent Authority will confirm the result of the sample by taking repeat samples in the flock consisting of two pairs of boot swabs per house (or equivalent faeces samples) plus one dust sample of at least 100 g or equivalent faeces or boot swabs if dust is not available). All other flocks on the premises will be investigated in the same way if *S. Enteritidis* or *S. Typhimurium* is detected in the official sample of the flock suspected to be infected with *Salmonella*.
- 3) If no *Salmonella* Enteritidis or *Salmonella* Typhimurium are isolated from the repeat official samples (see 2) above), the official control measures are withdrawn.
- 4) If *S. Enteritidis* or *S. Typhimurium* is isolated from the official faeces/boot swab samples no further eggs may be placed directly on the market for human consumption. This restriction will remain in place for the duration of production of that flock. If *S. Enteritidis* or *S. Typhimurium* is isolated from official faeces or boot swabs in any other flock on the holding, eggs from the flock may not be placed directly on the market for human consumption, and this restriction will remain in place while the flock remains in production.
- 5) If *S. Enteritidis* or *S. Typhimurium* is isolated only from a dust sample, the flock will remain under official control. Eggs may continue to be sent direct for human consumption. Official samples of boot swabs (or equivalent faeces) and dust will be taken at 2 week intervals for analysis. Eggs may continue to be sent for human consumption if *S. Enteritidis* or *S. Typhimurium* are not isolated from the faeces samples or boot swabs.
- 6) A notice will be served requiring the owner to clean and disinfect the buildings where the infected flock was kept. The owner or person responsible for the flock is required to clean and disinfect the building where the infected birds were kept, and provide evidence to the Competent Authority that the cleaning and disinfection has been satisfactory by taking appropriate samples and having them analysed for the presence of *Salmonella*. Re-stocking may not take place until

the cleaning and disinfection has been carried out and representative samples taken from the house after cleaning and disinfection have been shown to be negative for *S. Enteritidis* and *S. Typhimurium*).

- 7) When *S. Enteritidis* or *S. Typhimurium* is isolated from a sample taken from a flock before it comes into lay, the flock will be placed under official control. An official sample of the rearing flock suspected of being infected with *Salmonella* will be taken to confirm the infection. The official sample taken will be as detailed in Annex 2 and consist of either faeces or boot swabs. If *Salmonella Enteritidis* or *S. Typhimurium* is isolated from the official samples the flock may not be used to produce eggs direct for human consumption unless the eggs are treated in such a way as to eliminate *Salmonella*.
- 8) If the operator/owner of the laying flock disputes the results of the official test he/she may arrange to have samples taken of either
 - a) caecae and oviducts from 300 birds in the flock selected under supervision of the Competent Authority, or
 - b) 4000 eggs
- 9) and have them examined at his/her own expense at the national reference laboratory for the presence of *S. Enteritidis* or *S. Typhimurium*. Examination of eggs shall include both shell and contents. If *S. Enteritidis* or *S. Typhimurium* are not confirmed in these samples official controls on the flock will be removed and eggs may be placed on the market for direct human consumption. The Operator of the flock will be required to continue to comply with the sampling of the flock as detailed in Regulation (EC) No 1168/2006 Annex 2.1. If one or more of the samples taken from the birds is positive for *S. Enteritidis* or *S. Typhimurium* the flock will remain under official control and eggs may only be placed on the market for human consumption after treatment to eliminate *Salmonella*.
- 10) Antimicrobial treatment may not be used for the control of *Salmonella* in the national control programme except within the limits set by Commission Regulation (EC) No.1177/2006 on the use of specific control methods in the framework of the national programmes for the control of *Salmonella*. Vaccines to aid in the control of *Salmonella* may be used within the limits set by Commission Regulation (EC) No.1177/2006
- 11) Operators will be required to indicate at the time of sampling if the flock is being treated, or had received treatment during the last 2 week period, with antimicrobials for animal health or welfare reasons. If the flock is being treated with antimicrobials, or has been treated with antimicrobials during the last two week period for animal health or welfare reasons the flock will be re-sampled no sooner than at the end of the withdrawal period for the antimicrobial being used in the treatment.

12) Isolates of Salmonella Enteritidis and Salmonella Typhimurium will be examined to determine if they are vaccine strains according to the manufacturer's protocol. If vaccine strains are confirmed in samples no further action is taken.