



Association of Poultry Producers and
Poultry Trade in the EU



EUROPEAN POULTRYMEAT INDUSTRY GUIDE [EPIG]

Guide to Good Hygiene Practice for the
Prevention and Control of Pathogenic
Microorganisms with particular Reference to
Salmonella in *Gallus gallus* (Broilers) reared for
meat

- on farms,

and during catching, loading and transport

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PREFACE

This document has been developed jointly by a.v.e.c. and COPA-COGECA. a.v.e.c. is the association of poultry processors and poultry trade in the EU and COPA-COGECA are the Committee of Professional Agricultural Organisations in the European Union and the General Confederation of Agricultural Co-operatives in the European Union.

The aim of the guide is to assist poultry farmers rearing broilers for human consumption with preventing the introduction, spread and persistence of diseases and contamination that can affect the safety of the meat produced from the flocks destined for human consumption.

The document is elaborated according to article 9 of Regulation (EC) 852/2004 of the European Parliament and of the Council on the hygiene of foodstuff and it aims at providing guidance to effective application of Regulation (EC) 2160/2003 of the European Parliament and of the Council on the control of *Salmonella* and other specified food-borne zoonotic agents, the Regulation 178/2002, the General Food Law and CODEX Code of Hygiene Practice for meat.

The Guide complements other Codes of Practice that are in operation in the Member States and the recommendations set out in the OIE. It is a voluntary Guide of good hygiene practice for poultry farmers keeping chickens for meat production and the operators involved in catching, loading and transport of chickens. The Guide covers production steps from day old broiler chicks after leaving the hatchery at the broiler farm and till they arrive at the slaughterhouse.

The guide covers only chicken and not other species, although some of the measures for good hygiene practice may be relevant for other poultry.

The document provides guidance and should assist producers in implementing hygiene measures in order to manage the microbiological quality of live poultry and poultry meat. Particular emphasis has been put on preventing the introduction, spread and persistence of *Salmonella* in chickens reared for meat production.

The guide may be used as a starting point to develop national or regional guides which might be more detailed but should not be in contradiction with this Community guide. If Member States and or operators have already implemented higher standards and are applying them, the guide should never be used to lower the level of these standards.

It is recommended that flock owners and slaughterhouse operators discuss the implementation of the Guide with the veterinary practitioner and all operators involved in the production chain in order to consider how the guide best may be implemented, taking into account the local specific conditions.

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INTRODUCTION

Protecting poultry flocks from contamination by undesirable micro-organisms is an extremely important component of commercial poultry production. The introduction of a highly pathogenic, contagious disease organism into poultry flocks could result in serious economic consequences for the whole society. Developing and practicing daily bio-security procedures as best management practices on poultry farms will reduce the possibility of introducing zoonotic microbiological infections such as *Salmonella* and *Campylobacter*, as well as infectious diseases such as Avian Influenza and Newcastle disease. Poultry farmers and operators of slaughterhouses should understand the importance of, and be familiar with, the specifics of bio-security protocols and work closely to implement those programs in order to keep a consistent high bio-security level.

The effectiveness of a bio-security¹ program can be optimised if all poultry producers utilise best management practices.

Salmonella are intestinal bacteria that can be transmitted by all animals, including humans. Some *Salmonella* serotypes can cause serious clinical disease in poultry (*S. Gallinarum*, *Pullorum*, *arizonae*, but most *Salmonella* spp. normally do not cause clinical disease in poultry. If *Salmonella* is present in chickens reared for meat it increases the risk that the poultry meat produced from these chickens will be contaminated with these bacteria. There are approximately 2,500 different serotypes of *Salmonella*. Currently only about 200 *Salmonella* serotypes are associated with food-borne infections in humans in the EU.

Salmonella can be transmitted both vertically from parent flocks to progeny and horizontally from contamination in the environment to the birds. The vertical transmission from breeding flocks to commercial flocks has been seen for two of the most significant serotypes, *Salmonella* Enteritidis and *Salmonella* Typhimurium. A reduction of these two serotypes has been accomplished in many countries due to introduction of strict bio-security, effective surveillance and vaccination.

Horizontal transmission, that is introduction of infection from contaminated feed, resident contamination of hatchery equipment, contamination of poultry houses and farm pests between flocks, staff movements and contaminated equipment, however, remains a key route for infection. The relative importance of these routes varies in different countries and between poultry organisations so it is important to have in place effective monitoring including sampling programs that can identify sources of infection.

Salmonella are widespread and their complete elimination from the environment in all but the primary breeder sector (i.e. at the level of grand parent or pedigree) is unlikely to be economically feasible and possible in most countries.

Good management and bio-security can reduce the risk of introduction and persistence of infection to minimal levels, particularly since improved *Salmonella* control in the breeder sector and in feed production has greatly reduced the risk from these sources, although contaminated feed is still the main route of introduction of new *Salmonella* infections onto a farm in most countries, along with resident hatchery contamination. An effective *Salmonella* control program may have some beneficial effects on control of *Campylobacter* and other organisms since good bio-security generally has a protective effect. It is however much more difficult to prevent introduction of *Campylobacter* into a house because of its low infectious dose, which means that an effective hygiene barrier into the house must be consistently applied at all times.

Flock owners and transporters are strongly encouraged to include this Guide as part of their standard management practice. This Guide has been drawn up taking into account the fact that most chickens reared for meat are produced in controlled environment housing systems. The measures outlined in the Guide should form the cornerstone of *Salmonella* control and, if rigorously applied, they may substantially contribute to preventing and controlling other infections or diseases in flocks of chickens reared for meat production.

General measures are a good start, but they might not be sufficient to fully eliminate infection under all circumstances e.g. in case of persistent contaminated farms. It is therefore necessary to carry out specific investigations and revise control procedures when general measures are not working.

The guide does not cover specific measures for free range chicken. Nevertheless, many of the basic principles are applicable and should be followed as far as possible. Part of the Guide may be applied to free range or small scale rearing systems.

The Annexes to the guide include references to relevant legislation, a list of definitions referred to in the text and a checklist. The checklist can be used for the preparation of a detailed plan for bio-security measures and cleaning and disinfection of broiler rearing units, proper feed handling and during loading and transport.

A ON THE FARM

I. Bio-security measures¹

I.1. General

PRINCIPLES OF MEAT HYGIENE APPLYING TO PRIMARY PRODUCTION according to the Code of hygienic practice for meat.

- i. Primary production should be managed in a way that reduces the likelihood of introduction of hazards and appropriately contributes to meat being safe and suitable for human consumption.
- ii. Whenever possible and practicable, systems should be established by the primary production sector and the competent authority, to collect, collate and make available, information on hazards and conditions that may be present in animal populations and that may affect the safety and suitability of meat.
- iii. Primary production should include official or officially-recognised programs for the control and monitoring of zoonotic agents in animal populations and the environment as appropriate to the circumstances, and notifiable zoonotic diseases should be reported as required.
- iv. Good hygienic practice (GHP) at the level of primary production should involve for example the health and hygiene of animals, records of treatments, feed and feed ingredients and relevant environmental factors, and should include application of HACCP (hazard analysis of critical control points) principles to the greatest extent practicable.
- v. Animal (flock) identification practices should allow trace-back to the place of origin to the extent practicable, to allow regulatory investigation where necessary.

CAC/RCP 58-2005

(ftp://ftp.fao.org/codex/Publications/Booklets/Animal/Animal_Food_Prod_EN.pdf)

I.1.1 Farm Location

Poultry farms should ideally be located away from other livestock enterprises and possible sources of contamination including sewage treatment plants and landfill sites. Farms located close to such sites will need to ensure a higher level of protection against the risk of introduction of contamination. This should at least apply for newly built poultry farms.

I.1.2 The Poultry site²

A site plan should be available.

Good bio-security is extremely important to prevent the introduction of a wide range of micro-organisms into poultry farms.

Site design and management practices should be planned to facilitate this.

The perimeter of the site should be clearly identified and, if possible, fenced. Access to the site should be controlled and therefore allowed only through specified entry points that are clearly indicated and limited as much as possible to professionals who are familiar with bio-security measures. There should be a bell or other means of attracting attention and visitors should not be allowed to enter the site unaccompanied.

Visitor parking should be located adjacent to the specified site entrance, away from poultry buildings, feed or manure storage. There should ideally be a clean hard standing for parking.

It is recommended that the site should be equipped with a clean changing room⁵ at the entrance in which staff and visitors change into boots and overalls which are provided by the site. A disinfectant footdip³ and a hand sanitiser⁴ should be used on entry and when exiting the changing room. Hands should preferably be washed and dried as well as sanitised between houses.

On-farm roadways should have a hard surface, which can be cleaned effectively.

The poultry site should not house any other poultry, including ornamental or domestic fowl.

1.1.3 The buildings

Buildings should be constructed of durable (hard) material that can easily and effectively be cleansed and disinfected. The buildings should be maintained to prevent access by wild birds and vermin.

The exterior surroundings immediately around the poultry houses should be kept clear of vegetation and the area and surrounding vegetation should be kept clean and tidy to discourage vermin and wild birds. Miscellaneous materials should not be stored around poultry houses.

Buildings should have a minimal number of entry points and these should be kept closed and locked to prevent unauthorised entry.

There should be the provision to wash or sanitise hands⁴ and to change into overalls and boots prior to entering the unit, and before and after leaving each poultry house. The boots should not be used for areas outside the house. To maximise bio-security measures it is advisable to have at least a footdipping³ and/or an anteroom⁵ system. These measures, however, differ from country to country, but it is possible to construct an internal pen in which to change boots in houses without an outside service area.

Ancillary buildings such as storage rooms, rest rooms, toilets etc. should be constructed and maintained to a similar standard of the poultry houses.

1.1.4 Bio-security procedures at site and house entrance

Staff and visitors are a major bio-security¹ risk to stock on the site. On entry to the site staff and visitors should change into protective clothing provided by the site. In addition the footwear should be changed when entering and leaving each poultry house and it is recommended to change into protective clothing when entering each poultry house instead of at the entry of the site. The biggest risk is the transfer of infected material into the house on footwear, hands or moveable equipment. To reduce this risk it is advised that preferably a barrier⁵ bio-security system or at least a double footdip³ barrier is implemented on entry to all poultry houses.

Footdips are less effective bio-security systems than boot change systems. Either bio-security system can be used, however, it is imperative that the system is used consistently and effectively by all visitors and workers throughout the duration of the flock rearing.

Footdips should always be filled with approved disinfectants⁶. If footbaths are used then all visitors should thoroughly dip their footwear in the bath before entering the house. Disinfectants should be used at the correct dilution rates for bacteria such as *Salmonella* (this is much more concentrated than required for avian diseases) and be one of the products that are the least sensitive to inhibition by organic material and have the quickest action.

They should be changed and replenished on a regular basis according to the manufacturers' instructions. It is advisable to have two footdips in place; one outside the ante-room and one just before entry to the bird area. Boots should be thoroughly dipped both on entry and on exiting these areas.

For footbaths to be effective - boots must be clean before dipping. This can be achieved by using a separate disinfectant dip and brush, power washer or whacking off the dirt. Additionally a suitable disinfectant at an effective concentration should be used and replenished frequently to avoid contamination, dilution or evaporation/deterioration of active ingredients.

1.1.5 Equipment

Equipment used on site should be constructed of a durable material and capable of being cleansed and disinfected. Any shared equipment should be thoroughly cleansed and disinfected before and after being moved between poultry sites.

1.2 Litter supply and disposal

A variety of litter types may be used to bed the poultry but it should be obtained from a reliable source and be free from contamination by livestock, wild birds and rodents. Litter can be treated during manufacture or packing with proprietary blends of acids such as formic and propionic acid or antibacterial products such as formaldehyde or powdered disinfectants to reduce the risk of bacterial contamination.

Litter should be transported on vehicles that have been cleaned and disinfected prior to the loading of the litter, and not on vehicles that have been used previously to transport manure unless these have been well cleaned, disinfected and dried.

Litter stored in the open on pallets or in bulk should at all times be covered with clean water/bird/vermin-proof protection. Damaged bales should not be used. Used litter⁷ must be removed from the site promptly between rounds and be disposed of appropriately.

1.3 Vermin, feral animal and insect control

All buildings should be proofed as thoroughly as possible against entry by wild birds, rodents, feral animals and litter beetles. (See 4.1). Their presence in the vicinity should be discouraged by general tidiness, clearing vegetation and other perching places. Feed spillages should be cleaned up promptly. Rodent habitats should be eliminated by maintaining the premises in a tidy state. A planned program of baiting and/or trapping in and around the buildings and around the site perimeter should be undertaken.

A properly trained staff with knowledge of pesticides and their placement should undertake pest control. An accurate pest control plan should be established for the unit and full records kept of the pesticide usage in accordance with national legislation.

The pest control program should be intensified if there are any signs of rodent activity and the effectiveness of any action carefully monitored and amended as necessary. It is easiest to intensify the pest control program during the empty period.

Proofing and control measures should be reviewed regularly to assess their effectiveness.

1.4 Domestic animals on site

Pets and other animals, including livestock, must be kept away from poultry houses, feed and bedding stores, and service buildings.

The entry of dogs, cats and other livestock to poultry buildings (including feed or equipment stores) should be prevented at all times.

1.5 Feed and water supply

Finished feed or ingredients for home mixing should be obtained from a mill or supplier who operates in accordance with the legal requirements and relevant codes of practice in particular for the control of *Salmonella* and who will make available the results of *Salmonella* monitoring of feed and the mill environment or process.

The responsible veterinary practitioner for the flock⁸ may assist with interpretation of these results.

Finished feed should ideally be delivered in vehicles that are dedicated to that purpose and that are not back loaded with raw ingredients, other feeds or materials.

Where feed lorries are used for back loading raw ingredients then vehicles should be effectively cleaned and disinfected before finished feed is carried. There should be a documented hygiene program for all vehicles. If possible the feed should be delivered directly from the feed producer to the farmer.

Add-mix whole grain cereals should be either acid treated with an effective proprietary product containing formic and/or propionic acid or formaldehyde or heat-treated or treated according to prescriptions provided by national authorities. If the farmer uses his own grain and can control the risk of *Salmonella*, national authorities do not always require acid or heat treatment. When unloading the feed, a dust collection bag belonging specifically to the farm should be used. The feed supplier may also supply a new dust collection bag for every delivery. The dust is a good sample to test for potential contamination of the delivery.

Samples of each delivery of feed should be collected according to the chapter on Monitoring, Sampling and Testing and retained for at least one week after slaughter.

On farm feed should be stored in closed bulk storage bins or hoppers or sealed bags. Storage areas and slave hoppers etc. should be kept free of birds and rodents.

Any feed spillages should be promptly cleaned up to discourage vermin and wild birds. Spillages and residues from feed augers and slave hoppers etc. should not be stored and reused for the following flock.

Drinking water should preferably be from the municipal controlled supply. If from another source, a biological test should be performed prior to use and regularly retested (min 1/year). It is preferable to add a water sanitizer or use water treatment to non-municipal water (or there should be a possibility to apply water treatment if needed e.g. chlorination, UV-treatment). Untreated surface water should not be used.

The delivery system, including any header tank, should be enclosed and hygienically managed to prevent contamination.

1.6 Disposal of dead and culled birds

Flocks should be checked on a daily basis and any dead birds and culled birds should be removed and placed in a locked leak proof and pest proof container to prevent vermin and/or feral animal access.

Carcasses⁹ should be disposed of through a licensed route in accordance with the relevant EU legislation, in particular Regulation (EC) 1774/2002 laying down health rules concerning animal by-products repealed by Commission Regulation 1069/2009 laying down health rules concerning animal by-products with effect from 4 March 2011.

The storage facility and storage rooms for dead birds should be thoroughly cleaned and disinfected prior to introducing new birds.

Hands must also be washed and sanitised after handling dead birds. It is preferable to use disposable plastic gloves.

1.7 Day old stock

Breeding flocks and hatcheries supplying day old stock are required to comply with the relevant legislation on the monitoring of their supply flocks for *Salmonella*. (Commission Regulation 2160/2003).

Day old chicks should be transported in clean and properly disinfected vehicles, boxes and/or crates.

2. Management

2.1 Introduction

When producing animals for food, specific measures apply for the safety of the product. The primary goal of meat hygiene programs is protection of public health. Programs should be based on a scientific evaluation of meat-borne risks to human health and take into account all relevant food safety hazards, as identified by research and monitoring.

Meat hygiene requirements should control hazards to the greatest extent practicable throughout the entire food chain including the farm level.

Information available from successive stages of production should be taken into account so as to tailor hygiene requirements with the prevalence of hazards in the animal population from which the meat is sourced.

To the greatest extent practicable HACCP principles may also be applied in the design and implementation of hygiene measures.

Personnel working with animals for food production and in activities involved in hygiene should have the appropriate training, knowledge, skills and ability.

Results of monitoring and surveillance of animal should be considered with subsequent review and/or modification of animal/ hygiene requirements whenever necessary.

2.1.1 Management of the site

The whole site should be managed on an all-in all-out basis where possible. All units within a clearly defined bio-secure area must operate a period free of all livestock between flock

cycles. For multi age sites there should as a minimum be a break period free from stock for each of the defined bio-secure areas and very careful bio-security measures should be followed when moving between these areas.

2.1.2 Staff and visitors

Clean site-dedicated protective clothing and footwear must be supplied for all personnel and visitors. All clothing must be washed or discarded between flocks.

Visitors to poultry sites should be limited. Visitors including meter readers, fuel and feed delivery drivers and service personnel should be supplied with protective clothing and footwear on arrival, which must be retained on-site after use. However, visitors who do not enter the living area of the chickens, service areas, or feed/bedding storage areas of the poultry house are not expected to wear protective clothing and footwear.

The bio-security procedures at house entrance as described in paragraph 1.1.4 should be followed.

Hand-washing facilities and toilets must be available on-site and must include a basin with adequate facility to wash, disinfect, dry and sanitise hands.

All personnel and visitors must have the provision to wash or sanitise hands prior to entering poultry houses and after leaving poultry houses.

Visitors to the site should sign a visitors' book (date, arrival and departure time, name, company name, purpose and date of last contact with poultry should be recorded). Visitors from foreign countries should not have visited poultry within 48 h.

2.1.3 Vehicles

Vehicle visits to the poultry site should be minimised.

Provision for effective spray disinfection of the wheels and other contaminated parts of vehicles at the point of entry to the site is also advisable.

2.1.4 Work routines and training

Staff should have defined work routines which take account of bio-security and hygiene considerations.

Staff should be trained in the importance of contagious diseases, zoonoses and the correct hygiene, including personal hygiene, and bio-security protocols for minimising infection on the farm.

3. Monitoring Sampling and Testing

Monitoring of the *Salmonella* Status of the Flock.

Knowledge of the *Salmonella* status of flocks provides a check on the effectiveness of the bio-security measures and helps with decision making on disinfection at depopulation and will assist in the decisions on the organisation of slaughter. Planning of the timing of slaughter

of *Salmonella*-positive flocks will minimise cross contamination within the slaughter plant and reduce the level of *Salmonella*-contaminated poultry meat entering the food chain. The EU Regulation requires two pairs of boot swabs to be taken per flock within three weeks before slaughter to test for *Salmonella*. It is advisable to implement monitoring regimes for *Campylobacter* as well so that farm practices associated with negative flocks can be identified.

Positive results should be discussed with the responsible veterinary practitioner for the flock. Procedures should be reviewed and appropriate action taken in the case of contaminated houses.

The details of the monitoring regime to be used should be discussed with the operator of the processing plant, who has the utmost interest in a low *Salmonella* and *Campylobacter* prevalence. Monitoring regimes should also comply with legal provisions (note that from 1/1/2009 on, the Community provisions in Regulation (EC) No 646/2007 target setting for the reduction of prevalence of *Salmonella* Enteritidis and *Salmonella* Typhimurium will apply).

Dissemination of the results of testing results to all partners in the food chain will increase awareness and facilitate a better control of *Salmonella* (and *Campylobacter*) and should therefore be encouraged.

3.1. Sampling and testing *Salmonella*

3.1.1. Sampling for *Salmonella* testing

The following paragraphs describe the sampling and testing. The indication 'mandatory' refers to European regulation. The indication 'voluntary' or 'recommended' means that there is no European regulation. But do not forget that there might be national legal requirements.

3.1.1.1. Sampling of day old meat chicken chicks: voluntary

All breeding flocks have to be tested at defined intervals according to EU regulations 2160/2003 on the control of *Salmonella* and other specified food-borne zoonotic agent and 200/2010 as regards the target for the reduction of the prevalence of *Salmonella* serotypes in adult breeding flocks of *Gallus gallus*, so the vertical transmission of the top five *Salmonella* serovars is becoming less likely.

The testing of day old meat chicken chicks (broilers) upon arrival on the farm is not foreseen in the relevant EU legislation and therefore is not required on a mandatory basis.

Where a cross-check of the *Salmonella* status of the delivered chicks is desirable, sampling should be done in an aseptic manner using clean protective clothing, including disposable plastic gloves on the chicken lorry. Sample contamination by residual *Salmonella* in dust can easily occur if sampling takes place in a poorly disinfected chicken house.

Large multiple samples of chick delivery box liners, representing all supply flocks, or fabric swabs with large gauze or 'chiffonette' swab of at least 900 cm², plus all chicks found dead on arrival or culled on delivery can be tested. Samples of the same type can be pooled for testing where necessary.

3.1.1.2. Sampling of broilers: mandatory

The following chapters are describing sampling and testing according to the EU regulations but national legislation may go beyond this and should be observed.

3.1.1.2.1. Sampling period

Sampling of broilers is mandatory and covered by EU legislation.

Birds must be sampled within three weeks of slaughter.

It is preferable that the sampling is undertaken as close as possible to the slaughter date so that the plant can plan and slaughter positive flocks appropriately. It is however important to allow sufficient time for testing and reporting the result to allow scheduling and slaughter if necessary.

3.1.1.2.2. Sampling procedure

A minimum of two pairs of absorptive boot swabs per flock have to be used, i.e. four absorptive boot swabs per house. The surface of the absorptive boot swabs should be moistened beforehand with suitable diluents. It is advisable that the laboratory supplies the absorptive boot swabs.

The farm manager should place the absorptive boot swabs over sterile waterproof over boots put on after passing through any footdips³ and worn on top of his footwear, and ensure that he walks at least 100 steps – to include the whole length of the house and all sub-divisions. The sampling should be carried out before replenishing bedding. After sampling the boot swabs should be transferred carefully into a sterile container. Adhering faecal material should be present on the boot swabs, which should be visibly soiled. Samples should be dispatched promptly and properly to the laboratory with as little delay as possible and not be subjected to hot conditions before testing.

3.1.1.3 Sampling at thinning and depopulation: voluntary

When thinning or depopulation is performed on a flock tested negative for *Salmonella*, special care should be taken to avoid infection by contaminated catching equipment, crates and containers. The chicken farmer may wish to swab the transport lorry, the crates and/or the containers, which come into contact with his flock. To be prepared the farmer should contact the veterinary practitioner or the laboratory in advance. If this is done large fabric swabs should be used to swab multiple surfaces.

3.1.1.4. Sampling after cleaning and disinfection: voluntary but highly recommended after a *Salmonella*-positive flock.

To ensure that the cleaning and disinfection procedures have been effective it is recommended to take samples to detect the presence of *Salmonella*.

If *Salmonella* is detected after disinfection, ideally the disinfection process should be repeated.

Samples should be tested as soon as possible after collection, ideally on the same day. A sensitive *Salmonella* culture method, suitable for environmental samples, should be used. Laboratories, to which samples are sent for testing, should hold an accreditation relevant to the test being carried out. Mandatory samples taken according to the legislation should be sent to an accredited laboratory.

Additional tests to determine surface hygienograms¹⁰ involving enterobacteriaceae counts or TVC (total viable bacteria counts) may also be useful to assess the effectiveness of cleaning and disinfection where *Salmonella* is not present. If the test for *Salmonella* is found to be

positive, disinfection should be preferably repeated and the effectiveness of the disinfection program should be investigated.

To be tested for *Salmonella* samples can be taken for example from

- floor swabs and sweepings;
 - walls and doors, including hidden surfaces around hinges, etc;
 - gaps and cracks in the floor of the house;
 - litter manure trapped in holes and cracks in dwarf walls;
 - fittings (i.e. beams, pipes, header tank platforms, air extractors);
 - bases of wooden support posts and partitions;
 - wall mounted fan boxes and mobile stir fans;
 - slave feed hoppers and reservoirs;
 - brooder and other feed and water pans and systems;
 - floors and fittings in ante-rooms;
 - rodents, rodent faeces, litter beetles and other arthropods if present.
- The most important places are feeding systems, drinker systems, floors, air inlets, air outlets if roof mounted or reversed at end of crop, low level gaps and ledges in walls and partitions. Samples should be taken with large fabric swabs, ideally directly into pre-enrichment media which is cultured on the day of collection. At least 10 separate sites per sample category should be swabbed. Where necessary samples can be pooled for economy but the best results are obtained with a large number of individual samples.

3.1.1.5. Sampling of feed: voluntary.

The feed supplier should have in place, implemented and maintained a permanent procedure or procedures based on the HACCP principles including a *Salmonella*-control procedure according to EU regulation.

The testing of feed upon arrival on the farm or by the farmer is not foreseen in the relevant EU legislation and therefore should not be required on a mandatory basis, but samples can be taken and stored in a bio-secure way to test later if there is a problem. If the farmer uses his own grain he is expected to manage the *Salmonella* risk. Testing should include add mix.

In case the broiler grower wants to cross check the *Salmonella* status of the delivered feed, the sampling should be done with a sterile sampling spear, glove or inverted bag from several separate places out of the dome of the feed lorry in the presence of both parties involved (feed supplier and broiler grower). The sample size should be minimum 400 g. Residual dust in the base of the feed lorry after emptying is the best sample but this is not always accessible. An indication of feed contamination can also be obtained by testing dust from within bulk feed hoppers or breather pipes/dust bags.

3.1.2. Dispatch of samples

Samples should be packed and sent to the analyzing laboratory so that they will arrive at the laboratory within 48 hours after sampling.

4. Cleaning and disinfection

Cleaning and disinfection after emptying the poultry house and/or site.

It is important to follow the instructions of the manufacturer on the label when using cleaning, sanitising or disinfecting substances or products and to use suitable products at an effective concentration. In specific situations – e.g. when *Salmonella* has been found, it might be advisable to consult an expert or veterinarian as routine disinfectant concentrations and

some products used for avian pathogens are not suitable for *Salmonella*, which is relatively more resistant to disinfectants. Do not neglect vermin and insect control during the period that the site and /or house is empty and ensure adequate control of vermin, wild birds, insects and other arthropods.

4.1. Stage 1: removal of equipment and dry cleaning

The removal of all gross organic soiling is essential because litter, faeces and refuse may contain high levels of contamination and therefore may be a major source of infection. Organic material may make disinfectants ineffective.

- When a beetle problem has been identified, band spray immediately after depopulation, before the house cools with insecticide. Spray around the edges of the house a strip one metre wide on the lower walls and meeting the litter surface. Include dividing walls or posts. Refer to label for dilution rates of disinfectants suitable for General Bacteria including *Salmonella* – not just viruses or general application - and calculate the correct volume of disinfectant needed.
- Remove any residual feed from the feeder system and silo.
- Remove equipment if needed.
- Blow down dust.
- Remove all litter from the house.
- Load litter ensuring that all outside areas such as concrete pads by doors and silos are cleared of old litter⁷, dust etc. Cover loads before transporting from the site. If possible transport old litter as far as feasible from the site or any other poultry farm.
- Blow or wash down empty feed bins and disinfect after positive flocks, taking care not to leave moisture within the bins when the next load of feed is delivered.

4.2. Stage 2: Water and feed

4.2.1 Drinking water system

An intercrop¹¹ cleaning program for the water system should be in place. All parts of the water systems could be contaminated, especially header tanks where dust and debris can accumulate. Sanitising will clean the system and eliminate unwanted bacterial, protozoa or fungal growth.

- Drain the header tank and check that it is free from debris. Clean as required.
- Fill the tank with that volume of water required to fill the entire drinking system and add disinfectant to achieve the dilution indicated.
- Allow disinfectant solution to fill the drinking system. Follow the instructions of the manufacturer.
- Drain the system and fill with fresh water.

4.2.2 Feeding system

If the previous flock has been *Salmonella*-positive then the whole site including feeding systems, including those used for home mixing, silos and bins should be cleaned and disinfected.

4.3. Stage 3: cleaning and sanitising buildings and equipment

4.3.1. Pre-soak, if required

4.3.1.1 Soaking

Soak all surfaces thoroughly with a detergent sanitizer solution applied at low pressure with fan jet. Leave for 20-30 minutes or follow the instruction of the manufacturer then wash all surfaces with water.

4.3.1.2

Externally, spray air inlets, deposits from around fan boxes and the loading area if available. Also ensure that all dirty areas such as concrete aprons¹² around houses and bulk bin pads are washed clean.

4.3.2. Wash

Wash all surfaces with a pressure washer with the approved detergent sanitizer solution. Ensure coverage of air inlets, fan boxes, partitions, feeders and drinkers and all other equipment, including any removed from the house ensuring that they are all visibly clean. Do not forget to wash the hard surfaces around doors, and gates. Use a soak tank if available for removable equipment. Include any ancillary buildings such as service room in this cleaning procedure. A knowledgeable responsible person should check the standard of cleaning before the cleaning team leaves the site and missed areas should be re-cleaned where necessary.

4.4. Stage 4: maintenance and repair

Check after cleaning the floor, walls and equipment and repair holes and cracks and other defects. Check also for evidence of rodents and other pests, which may be more obvious after cleaning. It is advisable to leave a period for drying of surfaces after washing. This can be assisted by running the fans.

4.5. Stage 5: disinfection

The level of disease organisms present after cleaning is high enough to offer a serious disease challenge to a new flock.

It is possible to have the premises disinfected by an external professional company, including the interior of feed pipes of pan feeder systems, in cases of (recurrent) Salmonella or other infections. Formaldehyde may be used in such cases and is normally applied as a 5-10% solution by power washer.

- Feeders and drinkers should remain empty until disinfection is completed.
- Observe the manufacturers' instructions and recommendations, except that it is essential to use products and dilutions effective for Salmonella – not just viruses or general application. Using an approved disinfectant proven to be effective against viruses, bacteria, yeasts and moulds is essential.
- Disinfect all removable equipment and replace in cleaned house, then disinfect the cleaned house according to manufacturers recommendations, ensuring that moveable equipment replaced in the house and staff movements do not result in re-contamination.
- Ensure that a power washer with sufficient capacity is used to apply disinfectants at high pressure to saturation point.
- Apply solution evenly to all washed surfaces to achieve thorough wetting.
- Spray into the apex of the roof and work down the walls to the floors.

- Ensure that air inlet and outlet vents are included in the cleaning and disinfection and not left closed during disinfection.
- On completion of disinfection, close all doors and place foot dips at entrances.
- When an insect problem has been identified, spray the floors and walls evenly with insecticide after disinfection and drying.
- Vermin and insect control: ensure adequate control of vermin, flies and other arthropods.

4.6. Stage 6: Fogging (additional disinfection process)

The house may also be fogged to help control disease organisms introduced to the house during the setting up procedure and to disinfect inaccessible areas of the house. This must be additional to effective spray disinfection and never a substitute.

4.7. Stage 7: sampling and testing See Chapter A paragraph 3.1.1.4.

B CATCHING, LOADING AND TRANSPORT OF LIVE POULTRY

I. Depopulation: instructions for hygiene during catching and loading

The role of bio-security during catching and loading is paramount. Therefore effort should be made to ensure that no cross-contamination can take place during these activities. In order to reach this goal the following measures should be taken.

Catching and loading personnel or a professional catching team should be correctly trained and informed in such a manner that they understand the importance of personal hygiene and are aware of the means by which infection can be spread on hands, clothing and equipment. A nominated member of the catching team must be made responsible for the catching or loading/unloading operation.

The catching and loading personnel or team should plan its activities in such a way that flocks from which tests have shown an infection with *Salmonella* are caught at the end of the working shift in order to reduce cross-contamination between flocks.

The company transporting the flocks should be properly registered/approved and be fully responsible for the proper disinfection of the means of transport. The drivers should be trained in transport of live animals and the importance of personal hygiene and infections spread by hands, clothing and equipment.

The slaughterhouse/transporter should liaise with the farmer as to the time of transportation and scheduled slaughter so that the farmer can implement an appropriate feed withdrawal program to comply with slaughterhouse requirements and legislation.

- 1.0 Catching and or loading activities will either be performed by a fully authorised and licensed company or by properly-trained farm-personnel.
- 1.1 Suitable, clean protective clothing must be worn at the commencement of catching at each farm. Foot dips³ or barrier systems⁵ should be used where provided and approved disinfectants⁶ must be used and in accordance with manufacturers' recommendations. Footwear must be properly cleaned and sanitised between sites. Ideally footwear and other protective clothing provided by the farm should be used.
(Further details 1.1.4).
- 1.2 Personnel involved in the actual catching and loading should use the facilities of personal hygiene (sanitise hands) prior to the catching or loading activities. If gloves are used they should be cleaned and disinfected before arriving at the farm.
- 1.3 All vehicles, transport crates and other equipment used for catching and Loading must be properly cleaned and disinfected before arriving at the site.
- 1.4 The loading area for the loading of birds for transport to the processing plant must be clean, tidy and hygienically managed.
- 1.5 Dirty and clean equipment must be kept separated to avoid cross contamination.
- 1.6 The equipment used for catching and loading should be properly cleaned and disinfected before leaving the farm premises.
- 1.7 Catching and loading personnel should be correctly trained and informed in such a manner that they understand the importance of personal hygiene and are aware of the means by which infection can be spread on hands, clothing and equipment. A record of education must be kept. A nominated member of the catching team

must be made responsible for the catching or loading operation.

- I.8 Where possible a catching team or company should plan its activities in such a way that flocks from which tests have shown an infection with *Salmonella* are caught at the end of the working shift in order to reduce cross-contamination between flocks.
- I.9 The farm should supply adequate facilities so that the catching/ loading team can easily disinfect vehicles and equipment and wash, dry and sanitise⁴ their hands.
- I.10 Sampling and monitoring - sampling of the catching equipment.

The efficacy of cleaning and disinfection and hygiene measures of catching or loading staff and equipment can be checked by sampling using fabric swabs of vehicles, including foot wells, wheel arches, crates, modules and catchers' footwear and protective clothing.

2. Transport of live animals: instructions for hygiene during transport.

- 2.0 All poultry should be transported by authorised or licensed transporters in vehicles and transport crates or containers that have been well cleaned and disinfected before catching or loading.
- 2.1 Animal transport to slaughterhouse should be done in a direct way without calling at other poultry sites.
- 2.2 Truck drivers should be correctly trained and/or informed in such a manner that they understand the importance of personal hygiene and are aware of the means by which infection can be spread on hands, clothing and equipment.
- 2.3 Vehicles and transport crates must be cleaned and effectively disinfected using an approved disinfectant⁶ at a concentration which is effective for *Salmonella* directly after unloading before going to the next broiler farm and before leaving the slaughterhouse.

C RECORD KEEPING, DATA TRANSFER AND COMMUNICATION

1. Records

Operators responsible for broiler farms should record and retain information on the measures applied to control and prevent infection, and specifically the measures intended to control and prevent the presence of zoonotic *Salmonella* and *Campylobacter* as well as recording tests carried out and the results of such tests.

Specifically, the records listed below will be kept:

At the farm

The record keeping requirements are based on Regulation 853/2004 laying down specific rules for the hygiene of food of animal origin, Regulation 854/2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption, Regulation 2074/2005 containing provisions concerning food chain information, Regulation 2160/2003 and amendments by 646/2007 setting targets for the reduction of S.E. and S.T. in broilers.

- Numbers of poultry per flock/house received.
- Daily mortality of poultry per flock/house.
- Records of visits.
- Records of veterinary diagnoses, treatments and prescriptions (use of veterinary medicinal products, vaccination).
- Certifications or records of the origin of the stock.
- Results of the testing for *Salmonella*, specifying flocks sampled and date sampled.
- Certifications or records of the origin of the feed /raw materials.
- Results of the testing of the feed/raw materials.
- Records of the maintenance of the system for water sanitisation (chlorination or alternative methods).
- Maintenance of footdips.
- Cleaning of protective clothing.
- Results of controls of quality, based in the defined protocol.
- Records of the accomplishment of the disinfection protocol.
- Records of the accomplishment of the protocol for insect control.
- Records of the accomplishment of the protocol for rodent control.
- Record of the date and number of poultry delivered to the slaughterhouse.

For the conservation and maintenance of these records, the operator can be assessed by the veterinary officer.

2. Record Keeping

- All records required by this guide must be kept for 3 years at least.
- The storage conditions must prevent any deterioration or damage to the records.
- The records must be sorted and filed for complete and easy information and be legible.

3. External Communication

- Communication between the different members of the feed and food chain is an essential tool in the production of safe food and food products-
- Therefore, the users of this Guide are encouraged to communicate and share with both suppliers and customers the results of the testing and monitoring undertaken.

- Poultry meat producers must endeavour to ensure that all food safety hazards are not only identified, evaluated and controlled but also communicated to other members of the food chain so that they can be managed to minimise the impact on human and animal health.

ANNEXES

Annex I Reference to legislation, quality schemes and other sources

- Link to DG SANCO website with current legislation and guidelines:
http://ec.europa.eu/food/food/biosafety/hygienelegislation/comm_rules_en.htm
- Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC
- Commission Regulation 200/2010 of March 10, 2010 implementing Regulation (EC) no 2160/2003 on the reduction of the prevalence of salmonella serotypes in adult breeding flocks of Gallus gallus: http://eur-lex.europa.eu/Result.do?TI=VI&T2=2010&T3=200&RechType=RECH_naturel&Submit=Search
- Regulation (EC) 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents, as amended.
- Regulation (EC) No 646/2007: target setting for reduction in flocks of broilers
- Regulation (EC) No 1177/2006: requirements for use of antimicrobials and vaccines in control programmes for poultry
- Regulation (EC) No 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety
- Regulation (EC) 852/2004 on the hygiene of foodstuffs, 29 April 2004
- Commission Regulation (EC) No 2073/2005 as amended, which sets down microbiological criteria for foodstuffs (see section on Microbiological criteria)
- Guidelines  for the development of Community guides to good practice have been prepared together with the Member States.
- Guidance document [cs](#) [da](#) [de](#) [el](#) [es](#) [et](#) [fi](#) [fr](#) [hu](#) [it](#) [lt](#) [lv](#) [mt](#) [nl](#) [pl](#) [pt](#) [sk](#) [sl](#) [sv](#) on the implementation of certain provisions of Regulation (EC) No 852/2004 on the hygiene of foodstuffs.
- Regulation (EC) 853/2004 laying down specific hygiene rules for food of animal origin, 29 April 2004
- Commission Regulation (EC) No 2074/2005 which contains a set of implementing measures such as provisions concerning food chain information, recognised testing methods for detecting marine biotoxins, lists of establishments, model health certificates for certain products of animal origin and a derogation for foods with traditional characteristics
- Guidance document [cs](#) [da](#) [de](#) [el](#) [es](#) [et](#) [fi](#) [fr](#) [hu](#) [it](#) [lt](#) [lv](#) [mt](#) [nl](#) [pl](#) [pt](#) [sk](#) [sl](#) [sv](#) on the implementation of certain provisions of Regulation (EC) No 853/2004 on the hygiene of food of animal origin.

- Regulation (EC) 854/2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption, 29 April 2004
- 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
- Directive 2002/99/EC laying down the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption, 16 December 2002
- Regulation 1069/2009 of the European Parliament and the Council of 21 October laying down the health rules as regards animal by-products and derived products replacing Regulation 1774/2002
- Regulation (EC) no 183/2005 of the European Parliament and of the Council of 12 January 2005 laying down requirements for feed hygiene.
- No 1774/2002 laying down health rules concerning animal by-products not intended for human consumption, of 3 October 2002
- OIE Terrestrial Animal Health Code
<http://www.oie.int/eng/normes/guide%20to%20OIE%20intl%20standards%20v6.pdf>
- Zoonoses: DEFRA Codes of Practice for the control of Salmonella
(<http://www.defra.gov.uk/animalh/diseases/zoonoses/salmonella-cop.htm>) Regulation (EC)
- The Assured Chicken Production Scheme (ACP) standards for poultry:
(<http://www.redtractor.org.uk/site/REDT/Templates/GeneralStandards.aspx?pageid=28>)
- Belplume (<http://www.belplume.be>)
- IKB Chicken)
(https://bedrijfsnet.pve.agro.nl/pls/pbs/bntwpve.bnt2_menuutree_bdr.popupwindow?p_mode=view&p_cnr_id=30772&p_site_id=&p_corner_id=&p_item_id=&p_pfe_id=5)
- QS System (<http://www.q-s.info/Fleisch.97.0.html>)
- Spanish Guide of Good Hygiene Practice for the Control and Prevention of Salmonella in Gallus gallus poultry farms (broilers) reared for meat, 2005: GUIA DE BUENAS PRÁCTICAS DE HIGIENE PARA EL CONTROL Y LA PREVENCIÓN DE SALMONELLA ZOONÓTICA EN EXPLOTACIONES AVÍCOLAS DE PRODUCCIÓN DE CARNE DE POLLO
<http://www.mapa.es/es/ganaderia/pags/practicas/practicas.htm>

CODEX: CODE OF HYGIENIC PRACTICE FOR MEAT (CAC/RCP 58-2005):
http://ftp.fao.org/codex/Publications/Booklets/Animal/Animal_Food_Prod_EN.pdf

Annex II Laboratory

I. Licensed laboratories

According to Article 12 of regulation 2160/03 laboratories which perform testing for zoonotic agents in the frame of control programs at farm level have to

- be licensed by the Competent Authority of the MS
- be registered by third-party accreditation according to EN / ISO 17025:2002
- participate in ring tests performed, coordinated or supervised by the national reference laboratory.

Analyses on food (slaughterhouses) should be done in accordance with Article 5 of Regulation (EC) NO 2073/2005 as amended.

Other laboratories may not perform official tests for *Salmonella* and *Campylobacter*.

Annex III - Definitions

1. bio-security measures: are measures set up to implement hygiene standards at all levels of the production in order to prevent entry of undesirable organisms, including farm pests and micro-organisms, and to manage the animal health including the microbiological condition of the live poultry and the poultry meat. The measures as described in this Guide are implemented to prevent the introduction, spread and persistence of *Salmonella* in chickens reared for meat production and in poultry meat.

2. poultry site: can be one or more poultry houses. The poultry site (or holding) is an entity where the same farm entrance/exit from the road is used for access to one or more poultry houses. A unit is a part of a site that can be isolated from other units (a unit can be one or more houses) by intermediate bio-security measures.

3. footdip: footbaths with approved disinfectants - best when there are two - one just outside the anteroom and one inside immediately before entering the poultry house. Can be used as only barrier but works best combined with a step-over hygiene barrier and boot change within the anteroom.

4. sanitiser: sanitiser is an antiseptic liquid or gel provided for use after hand washing, it may contain alcohol or other disinfecting ingredients.

5. anteroom, hygiene barrier: description and place: being designated as “clean” or “part of the house”, and the other part being designated “dirty or “outside the house”. These areas are separated by clear demarcation e.g. physical barrier or a line painted on the floor of the house. Separate footwear is at least provided for the clean area. The ante-room must be kept clean and should be disinfected regularly. There should ideally be separate changing rooms for the entry to the site and houses with arrangements to change boot and cover all/protective clothing.

6. disinfection, chemicals: The chemicals used for disinfection are approved by the competent authority who also can provide a list of the approved disinfectants, and concentrations suitable for use when *Salmonella* is present.

7. old litter: used litter that remains after depopulation of the flock.

8. flock : means all poultry of the same health status kept on the same premises or in the same enclosure and constituting a single epidemiological unit: in the case of housed poultry, this includes all birds sharing the same airspace, normally a single house.

9. carcasses: the body of an animal after dressing

10. hygienograms: are surface bacterial counts that are used to monitor the efficiency of cleaning and disinfection of the empty house between flocks.

11. intercrop: period between two harvests.

12. concrete aprons: the hard surface, often made of concrete, outside the poultry house.

ANNEX IV CHECKLIST TO COMMUNITY GUIDE		
A BIO-SECURITY MEASURES		
I.1.1.	FARM LOCATION	
	Is the farm located away from other livestock and contaminating sources?	
I.1.2	POULTRY SITE	
	Is there a site plan?	
	Is access to the site controlled?	
	Is the perimeter of the site clearly indicated?	
	Is the perimeter of the site fenced?	
	Is there a specified entry point to the farm?	
	Is the visitor parking adjacent to the site entrance and easy to clean?	
	Do the farm roads have a hard surface that is easy to clean?	
	Is other poultry housed on the site?	
	Is a room for changing clothes, footwear and washing hands at the entrance available?	
I.1.1.	FARM LOCATION	
	Is the farm located away from other livestock and contaminating sources?	
I.1.2	POULTRY SITE	
	Is there a site plan?	
	Is access to the site controlled?	
	Is the perimeter of the site clearly indicated?	
	Is the perimeter of the site fenced?	
	Is there a specified entry point to the farm?	
I.1.3	BULDINGS	
	Are buildings durably constructed and can they easily be cleaned?	
	Is access by wild birds and vermin prevented?	
	Are the exteriors kept clean and tidy and not used for storing miscellaneous materials?	
	Are the entries kept closed and locked?	
	Is the site equipped with a clean changing room where staff and visitors can wash, sanitise hands and change clothes and footwear before and after leaving house?	
	Are the standards of ancillary rooms similar to those of the poultry houses?	
I.1.4.	BIO-SECURITY PROCEDURES AT SITE AND HOUSE ENTRANCE	
	Is it possible to change into coveralls and boots before entering and leaving the site and each poultry house for both staff and visitors?	
	Is there at least a double footdip barrier and room for changing clothes/boots for visitors and staff?	
	Are the footdips or changing of boots used consistently by all visitors and staff?	
	Is there a clear demarcation e.g. physical barrier between the clean	

	and dirty area?	
	Are footbaths used with approved and effective disinfectants?	
	Are footbaths changed or replenished according to manufacturers' instructions?	
1.1.5	EQUIPMENT	
	Is the equipment shared?	
	If yes, is there a facility to cleanse and disinfect shared equipment?	
1.2	LITTER SUPPLY AND DISPOSAL	
	Is litter coming from a reliable source and not contaminated?	
	Is litter stored at all times on pallets and covered with clean water/bird/vermin proof protection?	
	Are damaged bales and old litter removed and disposed of appropriately?	
1.3	VERMIN, FERAL ANIMAL AND INSECT CONTROL	
	Are buildings proofed against entry of wild birds, rodents, feral animals, litter beetles?	
	Are there visible feed spillages?	
	Is there a planned program of baiting and or trapping in and around the buildings and site?	
	Is there an effective pest control in place and records of pesticides used?	
	Is the staff responsible for the pest control properly trained?	
1.4	DOMESTIC ANIMALS ON SITE	
	Are pets and animals kept away from the houses, feed and bedding stores and service buildings?	
	Are guard dogs kept on the site and prevented from entering buildings?	
	Are guard dogs prevented from entering the site?	
1.5	FEED AND WATER SUPPLY	
	Is the feed supplier operating in accordance with relevant codes of practice and or guides?	
	Is the feed supplier controlling Salmonella and are the results of Salmonella monitoring provided?	
	Are dedicated vehicles used for the transport of the feed?	
	Are the vehicles effectively cleaned and disinfected before finished feed is delivered?	
	Is there a well documented hygiene program for the vehicles transporting the feed followed?	
	Are add-mix whole grain cereals used?	
	Are add-mix whole grain cereals acid or heat treated or treated acc. to national legislation?	
	Are samples collected of each delivery of feed and retained?	
	Are new dust collection bags used for unloading feed?	
	Is feed stored in closed bins, hoppers or sealed bags?	
	Are storage areas visible free of birds and rodents?	
	Are feed spillages and residues cleaned up and discarded?	
	Is drinking water from a controlled municipal supply?	
	Is water tested bacteriologically prior to use and at least once a	

	year?	
	Is non municipal water sanitised or chlorinated or UV treated to norms before use?	
1.6	DISPOSAL OF DEAD AND CULLED BIRDS	
	Are flocks checked on a daily basis?	
	Are dead or culled birds removed and placed in a closed leak proof and pest proof container?	
	Are carcasses disposed of according to 1774/2002 (repealed by Regulation 1069/2009 with effect from 4 March 2011)?	
	Are storage rooms/facility for dead birds thoroughly cleaned and disinfected prior to new birds?	
	Are hands washed after handling dead birds?	
	Are disposable gloves used for handling of dead birds?	
1.7	DAY OLD STOCK	
	Are hatcheries supplying day old stocks complying with relevant legislation on monitoring Salmonella?	
	Are day old chicks transported in clean and properly disinfected vehicles, boxes and/or crates?	
2	MANAGEMENT	
2.1.1	MANAGEMENT OF THE SITE	
	Is the site managed on an all-in-all-out basis and with careful measures when moving between sites?	
	Are the biosecure units operated with a period free of all livestock between flock cycles?	
	Are multi age sites managed with a break period free from stock for each bio-secure area?	
2.1.2	STAFF AND VISITORS	
	Are site dedicated and clean protective clothing and footwear supplied for all personnel?	
	Are all clothing washed or discarded between flocks?	
	Is there a barrier bio-security system or footdip barrier on the entry of the poultry house(s)?	
	Is there a clear demarcation e.g. physical barrier between the clean and dirty area?	
	Are footbaths used with approved and effective disinfectants?	
	Are hand washing facilities and toilets on site equipped with basin and soap or sanitiser?	
	Are all personnel and visitors instructed to washing hands prior to entering the poultry houses and after leaving the houses?	
	Is there a visitors book for visitors to sign date, arrival, departure, time, name, company name, purpose and date of last contact with poultry to be recorded?	
	Is a visible effort made to make sure by asking that visitors from foreign countries have not been in contact with poultry within the last 48 hours	
2.1.3.	VEHICLES	
	Are numbers of vehicles visiting limited?	
	Is spray disinfection used of the wheels and other contaminated	

	parts?	
2.1.4	WORK ROUTINES AND TRAINING	
	Has staff been appropriately trained in bio-security and hygiene measures?	
3	MONITORING SAMPLING AND TESTING	
3.1	SAMPLING AND TESTING FOR SALMONELLA	
3.1.1.1	SAMPLING OF DAY OLD CHICKS: VOLUNTARY	
	Is voluntary check up on day old chicks arriving at the farm carried out?	
	Is sampling carried out appropriately to avoid cross contamination?	
3.1.1.2	MANDATORY SAMPLING OF BROILERS	
3.1.1.2.1	SAMPLING PERIOD	
	Are birds sampled within 3 weeks of slaughter?	
	Are test results available before slaughter?	
3.1.1.2.2	SAMPLING PROCEDURE	
	Are minimum 2 pairs of absorptive boot swabs per flock used= 4 per house?	
	Are absorptive boot swabs over sterile, waterproof boots used?	
	Are the boots put on after passing through any footdips?	
	Is the whole length of the house and all subdivisions (min 100 steps) covered?	
	Is sampling taking place before replenishing of bedding?	
	Are boot socks sent in a sterile container and as quickly as possible to the laboratory?	
3.1.1.3	SAMPLING AT THINNING AND DEPOPULATION:VOLUNTARY	
	Is care taken when thinning and depopulating not to contaminate S. free broiler flocks with e.g. contaminated catching equipment, crates and containers?	
	Are large fabric swabs used when sampling surfaces?	
	Is optional swabbing of the transport lorry taking place?	
	Is the laboratory and veterinary practitioner informed in advance?	
3.1.1.4	SAMPLING AFTER CLEANING AND DISINFECTION: HIGHLY RECOMMENDED AFTER A S. POSITIVE FLOCK	
	Is the site thoroughly cleaned and disinfected after a S. positive flock?	
	Is the site properly sampled after the cleaning and disinfection?	
	Is the site disinfected again if samples are positive after disinfection?	
	Are at least 10 separate sites per sample category swabbed?	
	Are swabs taken directly into pre-enrichment media and tested on the day of collection?	
	Are Hygienograms used to monitor standards of decontamination?	
3.1.1.5	SAMPLING OF FEED:VOLUNTARY	
	Has the feed supplier in place, implemented and maintained procedures based on HACCP for feed?	

	Do the procedures also concern Salmonella control according to EU Regulation?	
	If samples of the feed deliveries are taken, are they stored properly for later use?	
	Is the sample taken in a suitable manner, from several places and preferably in the presence of both parties?	
	Is the sample size of 400 g? (preferably from residual dust in the base of the feed lorry)	
3.1.2	DISPATCH OF SAMPLES	
	Are the samples arriving at the analyzing laboratory within 48 hours after sampling?	
4	CLEANING AND DISINFECTION	
	Are manufacturers' instructions followed for the use of disinfectants and cleaning chemicals?	
4.1.	STAGE 1 :REMOVAL OF EQUIPMENT AND DRY CLEANING	
	Is all gross organic soiling removed before disinfection?	
	When beetle problems are detected do you spray immediately after depopulation and before cooling of the house, and again after disinfection and drying?	
	Do you use the correct disinfectant dilution rates suitable for Salmonella?	
	Do you remove residual feed and possibly equipment?	
	Do you blow down dust?	
	Do you remove all litter also from outside areas?	
	Do you remember to wash or blow down empty feed bins after positive flocks?	
	Do you cover loads before transporting them from the site to avoid contamination?	
	Do you take care not to leave moisture within the bins when next feed load is delivered?	
4.2	STAGE 2: WATER	
4.2.1	DRINKING WATER SYSTEM	
	Is an intercop cleaning system in place for the drinking water?	
	Is the water system throughoughly sanitised after a contamination?	
4.2.2	FEEDING SYSTEM	
	Has the whole site including feedings systems (home mixing, bins) been cleaned and disinfected?	
4.3	STAGE 3:CLEANING AND SANITISING BUIDINGS AND EQUIPMENT	
4.3.1	Are surfaces soaked with detergent and left to soak when needed?	
4.3.1.1	Are all inlets, deposits from around fan boxes and loading area sprayed?	
4.3.1.2	Are bulk bin pads washed clean?	
4.3.2	WASH	
	Are all surfaces, inlets, drinkers and other equipment including	

	ancillary buildings sanitised?	
	Are all air inlets, fan boxes, partitions, feeders and drinkers and other equipment including those removed temporarily from the house visibly clean?	
	Will a knowledgeable responsible staff check the cleaning and make sure insufficiently cleaned areas are re-cleaned where necessary?	
4.4	STAGE 4: MAINTENANCE AND REPAIR	
	Are all cleaned areas, floors, walls, equipments, repairs, cracks and other defects checked?	
	Is a period left for drying of surfaces after washing?	
4.5	STAGE 5: DISINFECTION	
	Is the site always disinfected between flocks?	
	Does the disinfection also include feed pipes and pan feed systems?	
	Are feeders and drinkers empty until disinfection is completed?	
	Are only approved disinfectants used and in amounts prescribed by the manufacturer?	
	Do you make sure that removed equipment does not recontaminate the disinfected house?	
	Is a power washer with sufficient capacity used to apply disinfectants at high pressure to saturation point?	
	Is the solution applied evenly to all washed surfaces to achieve thorough wetting?	
	Is it made sure to spray into the apex of the roof and work down the walls to the floor?	
	Is it made sure that the air inlets and outlet vents are included in the cleaning and disinfection and that they are not left closed during disinfection?	
	Is it made sure to close all doors and place foot dips at entrances after disinfection?	
	If insect problems arise are the floors and walls sprayed with insecticide after disinfection and drying.	
	Are vermin, flies and other anthropods controlled adequately?	
4.6.	STAGE 6: FOGGING	
	Is fogging used?	
B	CATCHING, LOADING AND TRANSPORT OF LIVE POULTRY	
I	DEPOPULATION : INSTRUCTIONS FOR HYGIENE DURING CATCHING AND LOADING	
box	Do the slaughterhouse/transporter agree with farmer the time of transportation for the appropriate feed withdrawal program to be established?	
1.0	Is catching and loading performed by licensed company or properly trained farm personnel?	
1.1	Are clean clothing and other bio-security measures (1.1.4) observed?	
1.2	Are personnel involved sanitizing hands prior to catching and loading activities?	
	If gloves are used are they properly cleaned and disinfected before use or new?	

1.3	Are all vehicles, transport crates and other equipment used properly cleaned and disinfected before arriving at the site?	
1.4	Is the loading area clean, tidy and hygienically managed?	
1.5	Is dirty and clean equipment kept separated to avoid cross contamination?	
1.6	Is the equipment used for catching and loading properly cleaned before leaving the farm?	
1.7	Is personnel catching and loading properly trained and training records kept? Is one catching team member made responsible for the operation?	
1.8	Are Salmonella positive flocks caught at the end of the day after other flocks?	
1.9	Does the farm supply adequate facilities for the catching or loading/ team to disinfect vehicles and equipment?	
1.10	Is the efficacy of cleaning and disinfection checked by sampling fabric swabs of all equipment used?	
2	TRANSPORT OF LIVE ANIMALS	
2.0	Are poultry transported by authorised/licensed transporters? Are transport crates and containers cleaned and disinfected before catching and loading?	
2.1	Are poultry transported directly to the slaughterhouse without calling at other poultry sites?	
2.2	Have the truck drivers received basic information on personal hygiene and been made aware of spread of infection from e.g. hands?	
2.3	Have vehicles and transport crates cleaned and effectively disinfected using an appropriate disinfectant after unloading before leaving the slaughterhouse and arriving on the broiler farm? Are the disinfectants used approved and used at a concentration effective for Salmonella?	
C	RECORD KEEPING, DATA TRANSFER AND COMMUNICATION	
I	RECORDS	
	Are numbers of poultry per flock/house received?	
	Is daily mortality of poultry per flock/house tracked?	
	Do you keep records of visits?	
	Do you keep records of veterinary diagnoses, treatments and prescriptions?	
	Do you keep records on the origin of the flocks?	
	Do you record the dates, flock identification and results of testing for Salmonella?	
	Do you keep records on the origin of the feed/raw materials?	
	Do you keep records on the sanitisation of the water?	
	Do you track the maintenance of the footdips?	
	Do you track the cleaning the protective clothing efficiently?	
	Do you track controls of quality based in the defined protocol?	
	Do you keep track of the accomplishment of the disinfection program?	
	Do you keep track of the accomplishment of the insect control?	
	Do you keep track of the accomplishment of the rodent control?	

	Do you register the date and number of poultry delivered to the slaughterhouse?	
2	RECORD KEEPING, DATA TRANSFER AND COMMUNICATION	
	Are all required records kept for 3 years or according to national legislation?	
	Do you keep the records in a place safe from deterioration and damage?	
	Are your records sorted and filed and easy to read?	
3	EXTERNAL COMMUNICATION	
	Are you sharing information with suppliers and customers on results of testing and monitoring on zoonotic food-borne pathogens as required?	
	Do you communicate food safety hazards and the testing and monitoring programs to other members of the food chain?	