OIE standards on meat inspection and Salmonellosis in poultry

Stuart A. Slorach
Chair, Animal Production Food Safety Working Group

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Ante- and post-mortem meat inspection

OIE Terrestrial Animal Health Code Chapter 6.2
Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection
Control and/or reduction of biological hazards of animal and public health importance by *ante-* and *post-mortem* meat inspection is a core responsibility of the Veterinary Services.

The Code chapter describes the role and responsibilities of the Veterinary Services in meat inspection.

Refers to the Codex Alimentarius **Code of Hygienic Practice for Meat** (a 52 page document - can be accessed via the Codex website ([www.codexalimentarius.net](http://www.codexalimentarius.net)))
The Codex Code of Hygienic Practice for Meat was developed by the Codex Committee on Meat Hygiene and adopted by the Codex Alimentarius Commission in 2005. It constitutes the primary international standard for meat hygiene and incorporates a risk-based approach to application of sanitary measures throughout the meat production chain. Specifically, it recognises the dual objectives that slaughterhouse inspection activities deliver in terms of animal and public health. It does not provide inspection measures for specific hazards, which remains the responsibility of the national competent authorities.
Animal and public health risks associated with livestock populations vary across regions and husbandry systems and *ante-* and *post-mortem* inspection needs to be tailored to the individual country situation and its animal and public health objectives.

Codex Code provides a platform for development of meat hygiene systems based on risk assessment. However, due to lack of information it is difficult to develop risk-based standards for foodborne diseases and zoonoses. While information is being accumulated, inspection systems will remain dependent on traditional approaches.
Codex Code of Hygienic Practice for Meat (3)

- Introduction
- Scope and use of the Code
- Definitions
- General principles of meat hygiene
- Primary production
- Presentation of animals for slaughter
- Presentation of killed wild game for dressing
- Establishments: design, facilities and equipment
- Process control
Codex Code of Hygienic Practice for Meat (4)

- Establishments: maintenance and sanitation
- Personal hygiene
- Transportation
- Product information and consumer awareness
- Training
- Annex 1. Risk-based evaluation of organoleptic post-mortem inspection procedures for meat
- Annex 2. Verification of process control of meat hygiene by microbiological testing
Veterinary services and meat inspection programmes (1)

Veterinary Services are primarily responsible for developing **ante-** and **post-mortem** meat inspection programmes

Wherever practicable, inspection procedures should be risk-based and management systems should reflect international norms and cover significant hazards to both human and animal health in the livestock being slaughtered
Veterinary services and meat inspection programmes (2)

Responsibilities of *Veterinary Services* (VS) include:

1. Risk assessment and risk management
2. Establishment of policies and standards
3. Design and management of inspection programmes
4. Assurances and certification of appropriate delivery of inspection and compliance activities
5. Dissemination of information throughout the meat production chain
Risk assessment and risk management

- VS should utilise risk assessment to the greatest extent possible in development of sanitary measures
- Give priority to addressing microbiological contamination
- Microbiological, serological or other testing at single animal and herd level as part of ante- and post-mortem inspection should be used to support surveillance, as well as risk assessment of prioritised foodborne hazards
- Link to human disease data
Establishment of policies and standards

- Competent Authority should provide institutional environment to allow VS to develop necessary policies and standards.

- Policies and standards should aim to meet both public health objectives and detect and remove animal health hazards. This may be achieved by removal of live animals at ante-mortem inspection or by removal of specific tissues at post-mortem inspection.

- VS should integrate their activities to prevent duplication of effort and unnecessary costs.
Design and management of inspection programmes

**VS** contribute through direct performance of some tasks or through auditing of activities conducted by other agencies or the private sector.

**VS** should allow flexibility in meat inspection service delivery through an officially recognised competent body operating under its supervision and control.

If personnel from the private sector are used for inspection activities under the overall responsibility and control of the **VS**, the **VS** should specify the competency requirements for all such persons and verify their performance.
Assurances and certification

Assurance and certification of appropriate delivery of inspection and compliance activities is a vital function of VS.

International health certificates providing official assurances for trading meat must engender full confidence to the country of importation.
Dissemination of information

To ensure the effective implementation of ante- and post-mortem inspection procedures, VS should have in place systems to monitor these procedures and exchange of information gained.

There should be an ongoing programme for monitoring hazards at appropriate points throughout the meat production chain to evaluate the efficiency of controls.

Animal identification and traceability systems should be integrated in order to be able to trace animals back to their place of origin and products derived from them forward through the meat production chain.
OIE Animal Production Food Safety Working Group Information Document

OIE Animal Production Food Safety Working Group 20-page Information Document: “Control of hazards of animal health and public health importance through ante- and post-mortem meat inspection”

Includes, among other things, examples of routine post-mortem inspection of heads, viscera and carcasses of animals intended for human consumption

The document can be accessed via the OIE website (www.oie.int)
Salmonellosis in poultry

OIE Terrestrial Code Chapter 6.5. Prevention, detection and control of *Salmonella* in poultry

OIE Terrestrial Code Chapter 6.4. Hygiene and disease security procedures in poultry breeding flocks and hatcheries
Chapter 6.5. Introduction

- Salmonellosis is one of the commonest foodborne bacterial diseases in the world
- Great majority of *Salmonella* infections in humans are foodborne with *S.* Enteritidis and *S.* Typhimurium accounting for a major part of the problem
- Serotypes and prevalence vary between districts, regions and countries. Surveillance and identification of prevalent serotypes in humans and poultry are important for development of control programmes.
- *Salmonella* can establish clinically inapparent infection of variable duration in most animal species
Purpose and scope

Methods for on farm prevention, detection and control of *Salmonella* in poultry

Complements Codex *Code of Hygienic Practice for Meat* and *Code of Hygienic Practice for Eggs and Egg Products*

Pathogen reduction at farm level first step in reducing pathogens in eggs and meat

Hygiene and biosecurity procedures to be implemented in poultry flocks and hatcheries given in Ch.6.4 of Terrest.Code

Recommendations are relevant for control of all *Salmonella*, with special attention to *S. Enteritidis* and *S. Typhimurium* as these are common *Salmonella* serotypes in many countries
Surveillance of poultry flocks for Salmonella

- Sampling methods, frequency and type of samples should be determined by Veterinary Services, based on a risk assessment.
- Microbiological testing preferred to serological testing because of higher sensitivity in broiler flocks and higher specificity in breeders and layer flocks.
- Available methods for sampling.
- Sample size and laboratory methods.
- Time and frequency of testing.

Results from surveillance may lead to implementation of additional prevention and control measures to reduce risk of transmission of Salmonella to humans.
Prevention and control measures (1)

*Salmonella* prevention and control may be achieved by adopting GAP and HACCP and general measures detailed in Chapter 6.4 on hygiene and disease security procedures in poultry production.

Additional prevention and control measures include vaccination, competitive exclusion, flock culling, organic acids and product diversion to processing.

Antimicrobials should not be used: effectiveness is limited, infection may be masked at sampling, residues in meat and eggs, antimicrobial resistance.
Prevention and control measures (2)

Day-old chicks used to stock poultry houses should be from breeding flocks and hatcheries that are free from at least *S. Enteritidis* and *S. Typhimurium*.

Layer and breeder flocks should be stocked from flocks that are free from at least *S. Enteritidis* and *S. Typhimurium* and have been monitored according to this chapter.

Poultry feed should be monitored for *Salmonella*. The use of heat-treated feeds or feeds subjected to other bacteriostatic or bactericidal treatment recommended.

Competitive exclusion may be used in day-old chicks to reduce colonisation by *Salmonella*.
Prevention and control measures (3)

- Vaccines are used against *Salmonella* infections caused by different serotypes in various poultry species, including single or combined vaccines. Vaccination can be used as part of an overall control programme, but not as the sole control measure.

- Culling is an option to manage infected breeder and layer flocks. Infected flocks should be destroyed or slaughtered and processed to minimise human exposure to *Salmonella*.

- If poultry are not culled, eggs for human consumption should be diverted for processing.
Prevention and control measures (4)

*S. Enteritidis* is characterised by its ovarian transmission pattern. Countries should set targets for eradicating or significantly reducing *S. Enteritidis* from egg-producing flocks through a guided policy for eradication from top of the production pyramid.

Responsible veterinarian should monitor surveillance results. When required by the *Competent Authority*, the veterinarian or other authorised person should notify the *Competent Authority* if presence of *Salmonella* of relevant serotype is confirmed.
Prevention of *Salmonella* spread from infected flocks

Article 6.5.6. lists the actions to be taken, in addition to general measures detailed in Chapter 6.4, if a flock is found to be infected with specific *Salmonella* serotypes of concern, including:

- investigations to trace origin of infection
- restrictions on movement of flocks
- precautions during transport, slaughter and processing of birds
- disposal of litter and cleaning and disinfection and
- bacteriological examination prior to restocking.
Ch. 6.4 Hygiene & disease security procedures in poultry breeding flocks & hatcheries

6.4.1-6.4.5 Recommendations applicable to breeding establishments, hatching egg hygiene and transport, hatchery buildings, hatchery building hygiene and personnel and visitors

6.4.6 Hygiene measures during and handling of eggs and day-old birds

6.4.7 Sanitisation of hatching eggs and hatchery equipment

6.4.8 Fumigation procedures at the hatchery

6.4.9 Monitoring of poultry breeding flocks and hatcheries for Salmonella. Gives details of types and numbers of samples to be taken and sampling frequency. Samples should be analysed in a laboratory authorised by the Veterinary Authority.
At its meeting in September 2010 the OIE Terrestrial Animal Health Standards Commission made a number of proposals for revising Chapters 6.4. **Biosecurity procedures in poultry production** and 6.5. **Prevention, detection and control of Salmonella in poultry** in the Terrestrial Animal Health Code. The revised chapters have been sent out to OIE members for comment.