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CHAPTER 6.4.

**BIOSECURITY PROCEDURES  
IN POULTRY PRODUCTION**

Article 6.4.1.

**Introduction**

This chapter provides recommended biosecurity procedures in *poultry* production.

Infectious *disease* agents of *poultry* are a threat to *poultry* health and, at times, human health and have significant social and economic implications. In *poultry* production, especially under intensive conditions, prevention is the most viable and economically feasible approach to the control of infectious *disease* agents.

Biosecurity procedures should be implemented with the objective of preventing the introduction and dissemination of infectious *disease* agents in the *poultry* production chain. The adoption of Good Agricultural Practices and the Hazard Analysis Critical Control Point (HACCP) system will help to achieve these objectives.

Article 6.4.2.

**Purpose and scope**

This chapter deals with biosecurity procedures in *poultry* production. It should be read in conjunction with the Codex Alimentarius Code of Hygiene Practice for Meat (CAC/RCP 58-2005) and Code of Hygienic Practice for Eggs and Egg Products (CAC/RCP 15-1976 Revision 2007).

This chapter provides general recommendations for infectious *disease* agents of *poultry*. Recommendations on specific *diseases* may be found in relevant *disease* chapters in the *Terrestrial Code*.

This chapter identifies several relevant biosecurity measures. The choice of measures to be implemented will vary according to national conditions, including *poultry disease* status, the risk of introduction and dissemination of infectious *disease* agents and the cost effectiveness of control measures.

Article 6.4.3.

**Definitions (for this Chapter only)**

**Breeders:** means *poultry* destined for the production of fertile eggs for incubation for the purpose of producing *day-old birds*.

**Culling:** means the depopulation of a *flock* before the end of its normal production period.

**Live bird markets:** means markets where live birds from various sources are sold for slaughter or further rearing.

#### Article 6.4.4.

### Recommendations on the location and construction of poultry establishments

#### 1. All establishments (poultry farms and hatcheries)

- a) A suitably isolated geographical location is recommended, taking into account the direction of the prevailing winds, location of other *poultry establishments* and the distance from roads used to transport *poultry*.
- b) *Poultry establishments* should be located and constructed to provide adequate drainage away from the site.
- c) *Poultry* houses and hatcheries should be designed and constructed (preferably of smooth impervious materials) so that cleaning and *disinfection* can be carried out effectively. Ideally, the area immediately surrounding the *poultry* houses should be paved with concrete or other impervious material to facilitate cleaning and *disinfection*.
- d) The *establishment* should be surrounded by a security fence to prevent the entry of unwanted animals and people.
- e) A sign indicating restricted entry should be posted at the entrance to the farm.

#### 2. Additional measures for poultry farms

- a) *Establishments* should be designed for use with single species and single purpose. Whenever possible, the 'all-in all-out' single age group principle should be used. If this is not feasible and several *flocks* are maintained on one *establishment*, each *flock* should be managed as a separate *epidemiological unit*.
- b) *Poultry* houses, and buildings used to store feed or eggs, should be constructed and maintained to prevent the entry of wild birds, rodents and insects.
- c) Where feasible the floors of *poultry* houses should be constructed using concrete or other impervious materials and designed so that cleaning and *disinfection* can be carried out effectively.
- d) Where feasible, feed should be delivered into the farm from outside the security fence.

#### 3. Additional measures for hatcheries

- a) The design of the hatchery should take account of work flow and air circulation needs, with 'one way flow' movement of eggs and *day-old birds* and one way air flow in the same direction.
- b) The hatchery buildings should include physical separation of areas used for the following:
  - i) personnel changing, showering and sanitary facilities;
  - ii) receipt, storage and transfer of eggs;
  - iii) incubation;

- iv) hatching;
- v) sorting, sexing and placing of *day-old birds* in boxes;
- vi) storage of egg boxes and chick boxes, egg flats, box pads, chemicals and other items;
- vii) washing equipment;
- viii) waste disposal;
- ix) dining facilities for personnel;
- x) office space.

#### Article 6.4.5.

### Recommendations applicable to the operation of poultry establishments

#### 1. All establishments (poultry farms and hatcheries)

- a) There should be good communication between all those involved in the *poultry* production chain from breeding to production and consumption to ensure that steps are taken to minimise dissemination of infectious *disease* agents. Personnel should have access to basic training in biosecurity relevant to *poultry* production and food safety.
- b) Traceability at all levels of the *poultry* production chain should be possible.
- c) Records of production should be maintained. On farm, this includes treatment, vaccination, *flock* history, mortality and *disease surveillance* data. This should be maintained on an individual *flock* basis. In hatcheries, relevant records include fertility, hatchability, vaccination and treatment. Records should be readily available for inspection.
- d) A veterinarian should be responsible for monitoring *poultry* health on the *establishment*.
- e) Access to the *establishment* should be controlled to ensure only authorised persons and *vehicles* enter the site.
- f) *Establishments* should be free from unwanted vegetation and debris.
- g) Procedures for the prevention of entry of wild birds, and the control of vermin such as rodents and arthropods should be implemented on a routine basis.
- h) All personnel and visitors entering an *establishment* should follow a biosecurity procedure. The preferred procedure is for visitors and personnel to shower and change into clean clothes and footwear provided by the *establishment*. Where this is not practical, clean outer garments (coveralls or overalls, hats and footwear) should be provided.

Before entering and after leaving a *poultry* house, personnel and visitors should wash their hands with soap and water and use a properly maintained disinfectant footbath. The disinfectant solution in the footbath should be changed on a regular basis to ensure its efficacy, according to the manufacturer's instructions.

- i) Personnel and visitors should not have had recent contact with other *poultry*, *poultry* waste, or *poultry* processing plant(s). This time period should be based on the level of risk of transmission of infectious *disease* agents. This will depend on the *poultry* production purpose, biosecurity procedures and *disease* status (e.g. the time between visiting a breeder *flock* and then a broiler *flock* would be less than the time between visiting a broiler *flock* and then a breeder *flock*).
- j) Delivery *vehicles* should be cleaned, and *disinfected* before loading each consignment of *hatching eggs*, *day-old birds* or *poultry*.

## 2. Additional measures for all poultry farms

- a) Animals, other than *poultry* of the appropriate (resident) species and age, should not be permitted access to *poultry* houses. No animals should have access to other buildings (e.g. those used to store feed or eggs).
- b) The water supply to *poultry* houses should be potable according to the World Health Organization or to the relevant national standard, and microbiological quality should be monitored if there is any reason to suspect contamination. The water delivery system should be *disinfected* between *flocks* when the *poultry* house is empty.
- c) Birds used to stock a *poultry* house should preferably be obtained from breeder *flocks* and hatcheries that are free from vertically transmitted infectious *disease* agents.
- d) Heat treated feeds with the addition of bacteriostatic or bactericidal treatments is recommended (e.g. organic acids). Where heat treatment is not possible, the use of bacteriostatic or bactericidal treatments is recommended.

Feed should be stored in a manner to prevent access by wild birds and rodents. Spilled feed should be cleaned up immediately to remove attractants for wild birds and rodents.

- e) The litter in the *poultry* house should be kept dry and in good condition.
- f) Dead birds should be removed from *poultry* houses as quickly as possible or at least daily. These should be disposed of in a safe and effective manner.
- g) Personnel involved in the catching of birds should be adequately trained in bird handling and basic biosecurity procedures.
- h) *Poultry* should be transported in well ventilated *containers* and should not be over crowded. Exposure to extreme temperatures should be avoided.
- i) *Containers* should be *cleaned* and *disinfected* between each use.
- j) When a *poultry* house is depopulated, it is recommended that all *faeces* and litter be removed from the house and disposed of in a manner approved by the *Veterinary Services*.

If litter is not removed and replaced between *flocks* then the litter should be treated in a manner to inactivate infectious *disease* agents, to prevent the dissemination of infectious *disease* agents from one *flock* to the next.

After removal of *faeces* and litter, cleaning and *disinfection* of the building and equipment should be done in accordance with Chapter 4.13.

All litter removed from a *poultry* house should be disposed of in a safe manner to prevent the dissemination of infectious agents.

- k) For *poultry flocks* that are allowed to range outdoors, attractants to wild birds should be minimised e.g. feeders should be kept inside the *poultry* house. *Poultry* should not be allowed access to sources of contamination (e.g. household waste, other farm animals, stagnant water and litter storage areas). The nesting area should be inside the *poultry* house.
- l) To avoid the development of antimicrobial resistance, antimicrobials should be used according to relevant directions of the *Veterinary Services* and manufacturer's instructions and in accordance with *Terrestrial Code* Chapters 6.8, 6.9., 6.10. and 6.11.

### 3. Additional measures for breeder farms

- a) Nest box litter and liners should be kept clean.
- b) *Hatching eggs* should be collected at frequent intervals, at least daily, and placed in a new or clean and *disinfected* packaging material.
- c) Grossly dirty, broken, cracked, or leaker eggs should be collected separately and should not be used as *hatching eggs*.
- d) *Hatching eggs* should be cleaned and sanitised as soon as possible after collection using an approved sanitising agent, in accordance with the manufacturer's instructions.
- e) *Hatching eggs* or their packaging materials should be marked to assist traceability and veterinary investigations.
- f) The sanitised *hatching eggs* should be stored in a dedicated room as soon as possible after collection. Storage conditions should minimise the potential for microbial contamination and growth and ensure maximum hatchability. The room should be well ventilated, kept clean, and regularly *disinfected* using disinfectants approved for this purpose.

### 4. Additional measures for hatcheries

- a) Dead in shell embryos should be removed from hatcheries as soon as they are found and disposed of in a safe and effective manner.
- b) All hatchery waste, garbage and discarded equipment should be contained or at least covered while on site and removed from the hatchery and its environs as soon as possible.
- c) After use, hatchery equipment, tables and surfaces should be promptly and thoroughly cleaned and *disinfected* with an approved disinfectant.
- d) Egg handlers, chick sexers and chick handlers should wash their hands with soap and water before commencing work and between working with batches of *hatching eggs* or *day-old birds* from different breeder *flocks*.
- e) *Hatching eggs* and *day-old birds* from different breeder *flocks* should be kept separate during incubation, hatching, sorting and transportation.
- f) *Day-old* birds should be delivered to the farm in new *containers* or in clean, *disinfected containers*.

## Article 6.4.6.

**Prevention of further dissemination of infectious disease agents of poultry**

When a *flock* is determined to be infected, in addition to the general biosecurity measures described previously, management procedures should be adjusted to effectively isolate the infected *flock* from other *flocks* on the *establishment* and other epidemiologically related *establishments*. The following measures are recommended:

1. Personnel should be trained in the management of infected *flocks* to prevent the dissemination of infectious *disease* agents to other *flocks* and *establishments*, and to humans (relevant measures include: handling of an infected *flock* separately, last in sequence and the use of dedicated personnel and clothing and equipment).
2. Epidemiological investigations should be carried out to determine the origin and route of transmission of the infectious *disease* agent.
3. *Poultry* litter/faeces and other potentially contaminated farm waste should be disposed of in a safe manner to prevent dissemination of infectious *disease* agents.
4. Depending on the epidemiology of the *disease*, the results of a *risk assessment*, and public and animal health policies, culling may be used to manage infected *flocks*. When infected *flocks* are destroyed or slaughtered they should be processed in a manner to minimise exposure of humans and other *flocks* to the infectious *disease* agent, and in accordance with recommendations of the *Veterinary Service* and relevant Chapters in the *Terrestrial Code*. Based on *risk assessment*, non-infected, high risk *flocks* may be culled. Movement of culled *poultry* should only be allowed for *slaughter* or destruction.

Before restocking, the *poultry* house or *establishment* should be cleaned, *disinfected* and tested to verify that the cleaning has been effective. Special attention should be paid to feed equipment and water systems.

Microbiological monitoring of the efficacy of *disinfection* procedures is recommended when pathogenic agents have been detected in the previous *flock*.

5. Depending on the epidemiology of the *disease*, *risk assessment*, vaccine availability and public and animal health policies, vaccination is an option to minimise the dissemination of the infectious *disease* agent. When used, *poultry* should be vaccinated in accordance with the directions of the *Veterinary Services* and the manufacturer's instructions. Recommendations in the *Terrestrial Manual* should be followed as appropriate.

## Article 6.4.7.

**Recommendations to prevent the dissemination of infectious disease agents from live bird markets**

1. Personnel should be educated on the significance of infectious *disease* agents and the need to apply biosecurity practices to prevent dissemination of these agents. Education should be targeted to personnel at all levels of operations in these markets (e.g. drivers, owners, handlers, processors). Programmes should be implemented to raise awareness of consumers of the risks associated with activities of live bird markets.

2. Personnel should wash their hands with soap and water before and after handling birds.
3. All *containers* and *vehicles* should be cleaned and *disinfected* every time they leave the market.
4. Live birds that leave the market should be housed separately from other birds for a period of time to minimise the potential dissemination of infectious *disease* agents of *poultry*.
5. Periodically the market should be emptied, cleaned and *disinfected*. This is of particular importance when an infectious *disease* agent of *poultry* deemed significant by the *Veterinary Services* has been identified in the market or the region.
6. Where feasible, *surveillance* should be carried out in these markets to detect infectious *disease* agents of *poultry*, especially those agents of zoonotic significance. The *surveillance* programme should be determined by the *Verterinary Services*, and in accordance with recommendations in relevant *disease* specific chapters of the *Terrestrial Code*.
7. Attempts should be made to ensure the possibility of tracing all birds entering and leaving the markets.