

TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION  
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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 and is not specifically related to trade.

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. Biosecurity will be enhanced with the adoption and implementation of the principles 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 Hygienic 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~~ infection* status, the risk of introduction and dissemination of infectious ~~disease~~ agents and the cost effectiveness of control measures.

Recommendations on specific infectious agents may be found in relevant *disease* chapters in the *Terrestrial Code*.

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 **and species** are sold for *slaughter*, or further rearing or production.

#### 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~~ **Factors to consider include** the ~~direction of the prevailing winds~~, location of other *poultry and livestock establishments*, wild bird concentrations and the distance from roads used to transport *poultry*.
- b) *Poultry establishments* should be located and constructed to provide adequate drainage ~~away from for~~ the site. Run-off or untreated site wastewater should not discharge into waterfowl habitats.
- 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 and hatcheries 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~~ establishment.

#### 2. Additional measures for poultry farms

- a) *Establishments* should be designed ~~for use with~~ to house a single species and a single production type purpose. ~~Whenever possible, the design should also consider 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, the establishment should be designed so that~~ each *flock* can ~~should~~ be managed as a separate *epidemiological unit*.
- b) *Poultry* houses, and buildings used to store feed, ~~or~~ eggs, or other material, should be constructed and maintained to prevent the entry of wild birds, rodents and ~~insects~~ arthropods.
- 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 other handling ~~placing~~ of *day-old birds* in boxes;
- vi) storage of egg boxes and ~~chick~~ boxes for *day-old birds*, egg flats, chick box pads liners, chemicals and other items;
- vii) ~~washing~~ equipment washing;
- 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) All establishments should have a written biosecurity plan. Personnel in the establishments should have access to basic training in biosecurity relevant to poultry production and understand the implications to animal health, human health and food safety.
- ~~a)b)~~ There should be good communication between ~~all those~~ personnel involved in the *poultry* production chain ~~from breeding to production and consumption~~ to ensure that steps are taken to minimise the introduction and dissemination of infectious ~~disease~~ agents. ~~Personnel should have access to basic training in biosecurity relevant to poultry production and food safety.~~
- ~~b)c)~~ Traceability at all levels of the *poultry* production chain should be possible.
- ~~d)~~ Records ~~of production~~ should be maintained: on an individual flock basis and include data on bird health, production. ~~On farm, this includes~~ cleaning and disinfection, ~~treatment medications,~~ vaccination, *flock history*, mortality and ~~disease surveillance~~ data. ~~This should be maintained on an individual flock basis.~~ In hatcheries, ~~relevant~~ records should include data on fertility, hatchability, vaccination and treatments. Records should be maintained on cleaning and disinfection of farm and hatchery buildings and equipment. Records should be readily available for inspection on site.
- ~~d)e)~~ ~~A veterinarian should be responsible for~~ Monitoring of poultry health on the establishment should be under the supervision of a veterinarian.
- ~~e)f)~~ Access to the *establishment* should be controlled to ensure only authorised persons and ~~vehicles~~ enter the site.
- ~~g)f)~~ *Establishments* should be free from control be free from unwanted vegetation and be free from debris that could attract or harbour pests.
- ~~g)h)~~ Procedures for the prevention of entry of wild birds into poultry houses and buildings, and the control of vermin such as rodents and arthropods should be implemented ~~on a routine basis.~~

i) Access to the *establishment* should be controlled to ensure only authorised persons and *vehicles* enter the site.

hi) All personnel and visitors entering an *establishment* should follow a biosecurity procedure. The preferred procedure is for visitors and personnel entering the *establishment* to shower and change into clean clothes and footwear provided by the *establishment*. Where this is not practical, clean outer garments (coveralls or overalls, head covering 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 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.~~

ij) 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 infection*~~ 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*).

jk) Any vehicle entering an *establishment* should be cleaned and disinfected according to a biosecurity plan. 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) 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) All personnel and visitors entering a *poultry* house should wash their hands with soap and water or sanitize them using a disinfectant. Personnel and visitors should also change footwear, use a boot spray or 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.

c) 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 or other material).

bd) The drinking 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 cleaned and disinfected between *flocks* when the *poultry* house is empty.

ce) 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.

df) Heat treated feeds with or without the addition of other bacteriocidalstatic or bacteriostaticicidal treatments (e.g. addition of organic acids) is are 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. The movement of feed

between flocks should be avoided.

- eg) The litter in the *poultry* house should be kept dry and in good condition.
- fh) Dead birds should be removed from *poultry* houses as quickly as possible ~~but~~ or at least daily. These should be disposed of in a safe and effective manner.
- gi) Personnel involved in the catching of birds should be adequately trained in bird handling and basic biosecurity procedures.
- hj) ~~To minimise stress~~ *Poultry* should be transported in well ventilated *containers* and should not be over crowded. Exposure to extreme temperatures should be avoided.
- ik) *Containers* should be cleaned and disinfected between each use, or disposed of in a safe manner.
- jl) When a *poultry* house is depopulated, it is recommended that all faeces and litter be removed from the house and disposed of in a safe manner to minimise the risk of dissemination of infectious agents 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~~ minimise the risk of dissemination of infectious ~~disease~~ agents from one *flock* to the next.

After removal of faeces and litter, cleaning and *disinfection* of the *poultry house 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.~~

- km) For *poultry flocks* that are allowed to range outdoors, feeders, feed and other items which may attract wild birds should be kept indoors. 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, litter storage areas, other ~~farm~~ animals, stagnant water and water of unknown quality and litter storage areas). The nesting area should be inside the *poultry* house.
- ln) 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 layers

Refer to Section 3 of the Codex Alimentarius Code of Hygienic Practice for Eggs and Egg Products (CAC/RCP 15-1976).

### 34. Additional measures for breeders ~~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, broken, or leaking eggs should be collected separately and should not be used as *hatching eggs*.

d) *Hatching eggs* should be cleaned and sanitized 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 cleaning and sanitisation ~~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.

#### 45. 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 of day-old birds 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~~ identifiable 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 suspected or known to be infected ~~or determined to be infected~~, in addition to the general biosecurity measures described previously, management procedures should be adjusted to effectively isolate ~~the infected flock~~ it 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~~ suspected or infected *flocks* to ~~prevent~~ minimise the risk of 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. A veterinarian should be consulted immediately.
3. When infection has been confirmed, ~~Epidemiological~~ investigations should be carried out to determine the origin and route of transmission of the infectious ~~disease~~ agent.
34. Poultry carcasses, litter ~~and~~ faeces and other potentially contaminated farm waste should be disposed of in a safe manner to ~~prevent~~ minimise the risk of dissemination of infectious ~~disease~~ agents. The disposal

method used will depend on the infectious agent involved.

45. Depending on the epidemiology of the ~~disease~~ **infectious agent disease**, the results of a *risk assessment*, and public and animal health policies, culling destruction or slaughter of a flock before the end of the normal production period 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 culling destroyed or slaughtered before the end of their normal production period. ~~Movement of culled poultry should only be allowed for slaughter or destruction.~~

Before restocking, the *poultry* house including equipment ~~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*.

56. Depending on the epidemiology of the ~~disease~~ **infectious agent 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, vaccines poultry should be administered 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 to and 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 consumer awareness ~~of consumers about~~ 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. Birds from diseased flocks should not be transported to live bird markets.
34. All *containers* and *vehicles* should be cleaned and *disinfected* every time they leave the market.
45. Live birds that leave the market and go to a farm should be housed kept separately from other birds for a period of time to minimise the potential dissemination of infectious ~~disease~~ agents of *poultry*.
56. 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.

67. 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 *Veterinary Services*, and in accordance with recommendations in relevant ~~disease-specific~~ chapters of the *Terrestrial Code*.
78. ~~Attempts~~ Efforts should be made to ensure the possibility of tracing all birds entering and leaving the markets.