



# **ASEAN BIOSECURITY MANAGEMENT MANUAL FOR COMMERCIAL POULTRY FARMING**

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## **ASEAN BIOSECURITY MANAGEMENT MANUAL FOR COMMERCIAL POULTRY FARMING**

### **PREFACE**

The outbreaks of Highly Pathogenic Avian Influenza (HPAI) had led The ASEAN Sectoral Working Group on Livestock (ASWGL) to a review on the biosecurity aspects for enhancement of biosecurity standards in poultry farming in ASEAN Region. The biosecurity management in commercial poultry farming will serve not only for disease control purpose by reducing the risk of introduction of the pathogenic agents into farms but also for safe trade of poultry and poultry products among ASEAN Member Countries as well as international markets.

The ASWGL has established an ASEAN Biosecurity Management Manual for Commercial Poultry Farming for poultry producers to advise and provide guidance to ASEAN member countries in implementing biosecurity measures for poultry farms.

The inputs, comments and support from all ASEAN Member Countries are appreciated. Grateful appreciation is extended to the workgroup comprising Singapore, Brunei and Indonesia delegates during 15<sup>th</sup> Meeting of the ASWG at Bandar Seri Begawan, Brunei for valuable inputs and efforts.

### **SECTION I**

# INTRODUCTION

## DEFINITION

Poultry means all domesticated birds, including backyard poultry, used for the production of meat or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds, as well as fighting cocks used for any purpose.

Birds that are kept in captivity for any reason other than those reasons referred to in the preceding paragraph, including those that are kept for shows, races, exhibitions, competitions or for breeding or selling these categories of birds as well as pet birds, are not considered to be poultry.

Commercial poultry farming in this manual is defined as farms that are raising poultry (broiler, layer, and breeder) for local, national and international trade.

Poultry production systems vary across ASEAN Member States from industrialized, highly integrated broiler production system to village-based system. The classifications of poultry production based on FAO document “Types of Farming Practices in Asia (February 2004)” are as follows:

Sector 1: Industrial integrated system with high level biosecurity and birds/products marketed commercially (e.g. farms that are part of an integrated broiler production enterprise with clearly defined and implemented standard operating procedures for biosecurity).

Sector 2: Commercial poultry production system with moderate to high biosecurity and birds/products usually marketed commercially (e.g. farms with birds kept indoors continuously; strictly preventing contact with other poultry or wildlife).

Sector 3: Commercial poultry production system with low to minimal biosecurity and birds/products entering live bird markets (e.g. a caged layer farm with birds in open sheds; a farm with poultry spending time outside the shed; a farm producing chickens and waterfowl).

Sector 4: Village or backyard production system with minimal biosecurity and birds/products consumed locally.

There is a great difference in the proportion of poultry farms in the various sectors among ASEAN Member States (AMS). This poses different degrees of risk of infection and spread of infectious diseases. Consequently, the disease control measures, including biosecurity measures will vary between AMS according to their poultry production systems.

In sector 4 in which there is minimum biosecurity, they present particular challenges for stakeholders concerned to improve the level of biosecurity. This requires special attention and effort for continuous improvement.

In sectors 1, 2 and 3 which there are high, moderate to low biosecurity levels, they also pose challenges to improve or ensure the level of biosecurity. The breach of biosecurity may result in the severe impact from the fast spread of disease to other farms or area. This manual is intended to focus on biosecurity management for commercial poultry farming.

## SECTION II

### BIOSECURITY

#### 1. DEFINITION

Biosecurity is defined as an overall program that uses a combination of physical barriers and directed actions in a specific way that should prevent the introduction of, or limit the spread of infectious disease.

Biosecurity has two components: bioexclusion, to preclude the introduction of disease to the farm; and biocontainment, to prevent the spread of disease within the farm and to other farms.

#### 2. BASIC CONCEPTS OF BIOSECURITY AT THE FARM LEVEL

Biosecurity has three main components namely isolation, traffic control and sanitation.

**Isolation** refers to the confinement of animals within a controlled environment. A fence keeps the birds in, but it also keeps other animals out. Isolation also applies to the practice of separating birds by age group. In large poultry operations, all-in/all-out management system allow simultaneous depopulation of facilities between flocks and allow time for periodic clean-up and disinfection to break the cycle of disease.

**Traffic Control** includes both the traffic onto the farm and the traffic patterns within the farm

**Sanitation** addresses the disinfection of materials, people and equipment entering the farm and the cleanliness of the personnel on the farm.

#### 3. DISEASES OF CONCERN AND ROUTES OF TRANSMISSION

##### 3.1 Diseases of concern

Most of the major diseases are viral diseases such as Highly Pathogenic Avian Influenza and Newcastle disease. Disease cards of both diseases according to OIE ([www.oie.int/eng/maladies/en\\_technical\\_diseasecards.htm](http://www.oie.int/eng/maladies/en_technical_diseasecards.htm)) are excerpted and shown as **Appendix 1**.

##### 3.2 Route of Transmission

Direct contact and mechanical transfer through fomites are considered to be the important routes of transmission of diseases.

## **Possible routes of transmission**

### **Poultry**

- Replacement of birds from sources of lower biosecurity standards
- Transfer of birds from farm to farm
- Infected birds that shed infectious organisms without showing signs of disease
- Dead bird collection and disposal

### **Possible Disease Reservoirs**

- Wild birds and water fowls
- Feral and domestic animals and pets
- Insects – fly, beetles, cockroaches
- Rodents – rats, mice
- Domestic birds – free range village poultry

### **People**

- Workers and visitors that move in and out of the farm especially those that move from farm to farm
- People can also serve as a mechanical vector for disease transmission i.e. hands, boots, hair, and clothing.

### **Equipment**

- Introduction of potentially contaminated equipment into the farm

### **Vehicles**

- Vehicle that enter the farm without proper disinfection

### **Manure/Litter**

- Improper disposal of used litter or manure from suspected/infected farm
- Use of poultry manure from other farms within the farm

### **Feed Supply**

- Feed supply and delivery from unknown or non-GMP factory
- Recycling of used feed bags
- Shared feed between farms

### **Air**

- Transmission through airborne or dust dispersion

### **Water**

- Surface water attracts wild bird and waterfowl,
- Contaminated water supply
- Temporary rain water flow from infected farm to other farms

## SECTION III

### BIOSECURITY REQUIREMENTS FOR FARM-FACILITIES AND PROCEDURES

This Section includes criteria of facilities – including location of farms, physical barrier, use of disinfection facilities and procedures for personnel and operations. In addition, documents would be used as monitoring tool to ensure compliance to procedures.

The Biosecurity procedures in this manual can be categorized into two sets: the operational and the emergency procedures.

#### A. OPERATIONAL BIOSECURITY PROCEDURES

These procedures should be implemented and followed on a daily basis. They give a high degree of assurance that diseases will not be carried into poultry houses on farms and will reduce the risk of transmission between farms. These should be seen as a minimum requirement. The individual producer will most likely to benefit from reduced economic losses associated with disease challenge. Industry wide compliance to these standards will promote a healthier poultry-rearing environment as well as provide mechanisms for effective disease containment should an outbreak occur.

##### 1. FARM STANDARDS

- 1.1 The farm site is defined as the immediate shed area, including pick-up areas and must have a perimeter fence. Maintain enough distance between growout and breeder farms and facilities such as hatcheries and feed mills.
- 1.2 Fencing of farm perimeter to prevent unwanted visitors. Farm site gate must be lockable with clearly visible biosecurity signage at all farm access points indicating “Restricted Biosecurity Area No Entry Unless Authorized” or similar wording, in addition, signage should also indicate the visitor is to contact grower before proceeding i.e. telephone number and/or enquire at house.
- 1.3 Parking area for vehicles not entering farm site. It is best to park vehicles at least 100 feet from the poultry houses.
- 1.4 Shower and change facilities stocked with clean protective clothing and boots should be provided and located away from the sheds. Shower, disinfect and change to clean uniforms before entry into production area.
- 1.5 Concrete stage with suitable water and power supply for sanitation and disinfection of vehicles should be provided at the farm site as well as a clearly marked “*designated parking area for visitors and employees*” near the entrance to the poultry house driveway. An effort must be made to enforce their use. (Some incoming service vehicles may have self disinfection capability.)

- 1.6 Should practice all-in-all-out management. Multi-age facilities represent a significant biosecurity risk to the poultry farm and industry.
- 1.7 Poultry houses must be locked when not in attendance. Barn entryways (workrooms) must always be kept clean and be routinely disinfected.
- 1.8 Footbaths containing suitable disinfectant product at all shed doorways must be used and separate footwear or plastic overshoes may be required for each poultry shed. They *must be maintained* so as not to become sources of contamination.
  - 1.8.1 Footbaths should be big enough to easily step in and out and should be covered or placed inside buildings, not exposed to outside environment.
  - 1.8.2 Have a brush and container with detergent available to remove dirt from the boots.
  - 1.8.3 Use disinfectants that do relatively well in the presence of organic materials. Replacing the disinfectant solution daily is recommended.
  - 1.8.4 In order to increase contact time, footbaths may be installed where people are expected to wash their hands.
- 1.9 Adequate dead bird disposal method will depend on environmental compliance requirements (pickup for rendering, incineration, on farm disposal pit, on farm burying, composting, etc.).
- 1.10 All poultry housing should be designed and maintained so as to prevent the entry of wild birds and limit the access of rodents as far as practical.
- 1.11 Landscape – trees and shrubs should not be in the immediate shed area (if they attract birds) but set back, to disperse air. Vegetation buffers for environmental compliance should not be compromised. The area around the sheds, at least 3-meter wide should be mown and free from debris.
- 1.12 All weather roads within the farm are recommended to ease cleaning and to prevent spreading of microbes by vehicles and footwear.
- 1.13 All other animal species (birds, pets, wildlife) must be excluded from the inside of poultry houses or feed storage areas. Effective *rodent/pest control programs* must be followed.
- 1.14 Water quality must be checked at least annually by an accredited laboratory for mineral, bacteria, chemical contamination and pathogen load. Treated mains water supply is preferable. Bore water, provided the system is enclosed, only requires chlorination if the microbiological counts are unsatisfactory.
- 1.15 Bagged feed should be stored in clean and dry room to avoid contamination from rodents and birds. Feed storage and delivery systems must be maintained water tight at all time. Feed, litter and equipment should be stored in section separated from the live-bird area to prevent contamination.
- 1.16 Cattle and other domestic stock should not have access to the farm site. Pets should not be allowed in production areas sheds.
- 1.17 No other avian species (poultry, ducks, geese, ostriches, aviary birds, pet birds) to be kept on the farm.

## 2. PERSONNEL STANDARDS

- 2.1 Personnel working on a grow-out farm should not work anywhere else in a poultry company or farm. Thus the conditions of employment should be set out as a guide for specific biosecurity issues as following:
- 2.1.1 Employees living on a poultry farm should work at that farm.
  - 2.1.2 Employees should not own poultry or pet birds
  - 2.1.3 Rides to and from work should be limited to employees working on the same farm.
  - 2.1.4 Employees should not visit locations where birds or swine are present. In the rare occasion when this may occur (e.g., state fair), the employee will be expected to take a shower and change clothing before going to work.
  - 2.1.5 Employees should always shower and put on clean clothing before going to work. This is especially critical (see **Appendix 2** "Personnel Quarantine Declaration"):
    - a) Following meeting with family members or friends that may have birds, when planning on going to a company farm on the same day.
    - b) When participating or living with anyone who may participate in activities such as school projects, 4 H club, etc. where poultry or other poultry people are present.
    - c) After hunting wild birds, killing, or dressing poultry
  - 2.1.6 Anyone working for a poultry company cannot have a second employment with a company or organization that may be associated with any bird production, sale, rescue, etc.
- 2.2 Farm personnel must be provided and documented the training in On-Farm Biosecurity Procedures.
- 2.3 Repair and maintenance contractors who have had contact with poultry or other birds that day should not enter sheds in production unless a) it is an emergency and b) they use hand sanitiser, clean footwear and overalls. Routine maintenance should be conducted, where possible, between batches. Tools taken onto the farm must be cleaned and free of dust and organic matter
- 2.4 Delivery drivers e.g. gas and feed must not enter sheds.
- 2.5 Growers should avoid contacts as detailed in 2.1. Where contact is unavoidable, a shower and change of clothes is required before entering sheds.
- 2.6 A Visitor Logbook – a record must be kept of all visitors to the poultry sheds. It must be maintained and enforced. (See **Appendix 4** Visitor Log Sheet Template.
- 2.7 Any neighbours, friends, other growers, egg farmers or sales representatives, likely to have been exposed to poultry or birds should at all times be restricted from the sheds unless they shower and change clothes.
- 2.8 Farm Clothing (footwear & outerwear) – should not be worn off farm by the grower or his employees, nor should street clothing be worn on site. Clothing used on the farm should be washed at any approved facilities before being returned to the farm office. It is critical that boots are not worn or taken off-farm. They are the most likely method for personal

disease spread. Boots will be washed and disinfected at the remote site and will be disinfected again upon arrival at the farm office.

## 2.9 Visitors

2.9.1 All visitors must follow biosecurity procedures as outlined in the Visitor Protocol. They should not have been on any other poultry facilities for at least 24 hours before the visit.

2.9.2 All visitors should park their vehicles outside the farm site unless it is essential that the vehicle be taken on site e.g. feed trucks. It is best to park vehicles at least 100 feet from the poultry houses. Visitors from high risk area should be wait for five days before allowing entry farm as at this period offers plenty of opportunities for showers and laundry of clothing that might have been used in a high risk area. Visitors entering sheds to sign “Visitors Declaration” (see **Appendix 5**).

2.9.3 Service persons should prepare themselves prior to a daily farm visit. Company service personnel by necessity make multiple farm visits on a single day. They must be particularly adhering to their biosecurity protocol. Service people must be properly trained to enter and exit farms and observe strict biosanitation measures. Movement from farm to farm is a requirement for technical service personnel. Visits should always be made from “clean areas i.e. home, younger or healthy farm. They will be expected to visit younger or healthier flocks first. Protective clothing including headwear and boots should be worn on farm site.

Hands must be sanitised before entering sheds. Handwashing is important to protect the birds and to protect those working with birds. In an emergency visits may be made from a “dirty” area after a shower and complete change of clothing. If vaccination is practiced, a Vaccination Crew should strictly follow their biosecurity protocol.

2.9.4 Pick up – there should be heightened awareness of disease control measures during the pick-up period. Pick-up/Catching crews should work from youngest to oldest or all young birds or all old birds on a nightly basis in accordance with the processing company’s pick up biosecurity procedures. Pick up is a processing company area of responsibility.

## 3. OPERATIONAL STANDARDS

### Birds

**3.1 Replacement stock** should be sought directly from reputable suppliers with flocks of a higher or comparable health status.

**3.2 Dead birds** must be handled and disposed of in an acceptable manner. (see Appendix 8 Mortality Management Protocol). If the flock experiences unexplained mortality, clinical sings or production drops, birds must be submitted to a qualified poultry diagnostic laboratory. Representative samples should be submitted in containers that allow for bio-containment and safe transfer. (See Appendix 9 Diagnostic Submission Protocol)

### **3.3 Feed**

- 3.3.1 Feed supplied to Compartment must derive from an official approved Biosecurity System Feed Mill.
- 3.3.2 Feed storage and delivery systems must be maintained water tight at all time. Feed spills must be cleaned up as they occur. Feed attracts birds and rodents to the farm.
- 3.3.3 Between each flock of poultry, feeding-system should be cleaned and disinfected in order to reduce the incidence of moldy feed and mold toxin problem.

### **3.4 Water Supply**

- 3.4.1 Water quality must be checked at least annually by an accredited laboratory. If treated main water is not available, water must be chlorinated or treated by some other appropriate method e.g. ultraviolet light. However, routinely maintained in-line water filters are highly recommended.
- 3.4.2 Dam and bore water should be chlorinated at a level to achieve 1 – 2 ppm before water is used. There must be a holding time for chlorinated water of at least two hours before being used. Growers should be aware that not all mains water is treated. Chlorine testing must be carried out daily and results logged. Where other systems are used, efficiency must be checked at regular intervals. This may involve microbiological testing.
- 3.4.3 Between flocks, it is recommended to sanitise the waterlines as dirty waterlines will interfere with medications and vaccines as well as transmit disease agents. All drinking equipment should be cleaned as well between each flock.

**3.5 Litter and feed** should also be purchased from approved sources implementing quality assurance programs that meet industry standards. Fresh litter should be used for each batch of poultry.

### **Documentation and Records**

**3.6 Recording procedure.** All the procedures should be documented.

**3.7. Flock Health Records** are to be maintained. Vaccination programs must be clearly documented as part of this record. Vaccines must be stored and handled according to label requirements.

## **B. EMERGENCY BIOSECURITY PROCEDURES**

In the event of an outbreak of an emergency disease or serious endemic disease, high risk biosecurity procedures will be implemented.

In addition to routine procedures, there should be additional measures implemented in the event of outbreak of emergency diseases and serious endemic diseases in order to minimize the magnitude of the problem on the affected farm and to minimize the risk that the disease spreads to other farms.

It is a critical to get good professional help when a disease problem is identified in a flock. For many infectious diseases, time is of essence. The sooner the problem is identified and reported, the sooner appropriate actions can be taken including enhanced the routine biosecurity, collecting of samples for diagnostic purposes, and initiation of treatment and or vaccination, if available.

## 1. FACILITY STANDARDS

- 1.1 The farm gate should be kept locked at all times.
- 1.2 All poultry houses and service buildings should be kept locked after working hours.
- 1.3 Practice the **NO EXCEPTIONS** rule

## 2. PERSONNEL STANDARDS

- 2.1 No visitors. Company personnel will discontinue routine visits except on suspicion of problems.
- 2.2 Repair and maintenance – no routine work, only emergency work to be carried out.
- 2.3 Personnel going to a quarantine farm would be expected to have written approval by the production manager or company veterinarian. In order to avoid bringing contaminated material to the central facilities all personnel should proceed as Appendix 11 Procedure when going to quarantine farms.

## 3. OPERATIONAL STANDARDS

- 3.1 When an outbreak occurs, it is essential to have an effective plan of action to ensure safe entry to and exit from a farm experiencing an infectious disease outbreak. Poultry health personnel must follow a stringent biosecurity protocol as of **Appendix 10** Biosecurity Protocol for Poultry Health Personnel When an Outbreak Occurs.
- 3.2 When a visit is necessary, it is important to follow a standards protocol for visitors entering a commercial poultry farm that will serve a dual purpose: protect the birds on the farm and on other farms.
- 3.3 Only essential vehicles should be allowed on the farm premises. The vehicles should be washed and disinfected both the exterior of the vehicle and inside the cab and washable mats and vinyl must be washed. The vehicle should then proceed and be park away from poultry houses. The washing and disinfection process should be repeated when the vehicle leaves the farm.
- 3.4 No birds, manure or litter have to be moved on or off the farms until disease status is clarified. If a major outbreak should occur, the company will introduce further measures as required.
- 3.5 When there has been an unexplained situation such as increase in mortality, change in production parameters such as feed/water consumption, or egg production/shell quality; etc., onset of clinical signs of disease. Producers are recommended to establish list of contact persons for emergency contacts (see **Appendix 11** Emergency Contact List).
- 3.6 Upon suspicion of an infectious disease, especially HPAI, in a poultry flock, a set of guidelines that are to be enacted by producer must be set

out in order to limit the spread of disease between barns and, most importantly, the spread of disease off the farm to other poultry operations.

- 3.7 When producers or growers suspect an infectious disease on their farms they must perform urgent actions immediately.

## **APPENDICES**

<b>Appendix 1</b>	<b>Selected OIE Disease Cards</b>
<b>Appendix 2</b>	<b>Personnel Quarantine Declaration</b>
<b>Appendix 3</b>	<b>Pest Control Protocol</b>
<b>Appendix 4</b>	<b>Visitor Log Sheet Template</b>
<b>Appendix 5</b>	<b>Visitors Declaration</b>
<b>Appendix 6</b>	<b>Mortality Management Protocol</b>
<b>Appendix 7</b>	<b>Diagnostic Submission Protocol</b>
<b>Appendix 8</b>	<b>Manure Management Protocol</b>
<b>Appendix 9</b>	<b>Procedure when going to quarantine farms</b>
<b>Appendix 10</b>	<b>Biosecurity Protocol for Poultry Health Personnel When an Outbreak Occurs</b>
<b>Appendix 11</b>	<b>Emergency Contact List</b>
<b>Appendix 12</b>	<b>Biosecurity Checklist for Continuous Improvement</b>

## APPENDIX 1 – SELECTED OIE DISEASE CARDS

OIE Disease cards of Highly Pathogenic Avian Influenza and Newcastle Disease ([www.oie.int/eng/maladies/en\\_technical\\_diseasecards.htm](http://www.oie.int/eng/maladies/en_technical_diseasecards.htm)) are excerpted as follows:

### **HIGHLY PATHOGENIC AVIAN INFLUENZA**

#### **AETIOLOGY**

##### ***Classification of the causative agent***

Virus family Orthomyxoviridae, genus *Influenzavirus* A, B. To date, all highly pathogenic isolates have been influenza A viruses of subtypes H5 and H7

##### ***Resistance to physical and chemical action***

Temperature: Inactivation by 56°C/3 hours; 60°C/30 min

pH: Inactivated by acid Ph

Chemicals: Inactivated by oxidising agents, sodium dodecyl sulphate, lipid solvents,  $\beta$ -propiolactone

Disinfectants: Inactivated by formalin and iodine compounds

Survival: Remains viable for long periods in tissues, faeces and also in water

#### **EPIDEMIOLOGY**

- Highly contagious

##### ***Hosts***

- Highly pathogenic avian influenza isolates have been obtained primarily from chickens and turkeys
- It is reasonable to assume all avian species are susceptible to infection

##### ***Transmission***

- Direct contact with secretions from infected birds, especially faeces
- Contaminated feed, water, equipment and clothing
- Clinically normal waterfowl and sea birds may introduce the virus into flocks
- Broken contaminated eggs may infect chicks in the incubator

##### ***Sources of virus***

- Faeces, respiratory secretions
- Highly pathogenic viruses may remain viable for long periods of time in infected faeces, but also in tissues and water

### **NEWCASTLE DISEASE**

## **AETIOLOGY**

### ***Classification of the causative agent***

Newcastle disease (ND) is a member of the family Paramyxoviridae in the genus Avulavirus. There are ten serotypes of avian paramyxoviruses designated APMV-I to APMV-10 and ND virus (NDV) has been designated APMV-1. NDV has also been categorised into five pathotypes based on clinical signs in infected chickens, designated: a) viscerotropic velogenic, b) neurotropic velogenic, c) mesogenic, d) lentogenic or respiratory and e) subclinical enteric. Pathotype groupings are rarely clear-cut.

Temperature Inactivation by 56°C/3 hours; 60°C/30 min

:

pH: Inactivated by acid Ph 2

Chemicals/D Ether sensitive; inactivated by formalin, phenolics and oxidising isinfectants agents (e.g. Virkon.); chlorhexidine, sodium hypochlorite (6%).

Survival: Survives for long periods at ambient temperature, especially in faeces.

## **EPIDEMIOLOGY**

### ***Hosts***

- Many species of birds both domestic and wild
  - o Chickens are highly susceptible to disease; turkeys do not tend to develop severe signs
  - o Game birds (pheasants, partridges, quail and guinea fowl) and parrots (order Psittaciformes) vary in susceptibility; cockatiels are susceptible
  - o Wild birds and waterfowl (order Anseriformes) may harbour virus subclinically; some isolates within certain genotypes have caused epizootics within these species
  - o Young cormorants (*Phalacrocorax* spp.) have demonstrated disease associated with APMV-1
  - o Disease has been recorded in ostriches (order Struthioniformes) and pigeons (order Columbiformes) are known to be susceptible
  - o Raptors are usually resistant to ND; except reports of acute disease in bearded vulture (*Gypaetus barbatus*), white-tailed sea eagle (*Haliaeetus albicilla*), a wild osprey (*Pandion haliaetus*) and some species of falcons
  - o Other birds known to have been affected by NDV include: gulls (order Charadriiformes), owls (order Strigiformes), and pelicans (order Pelecaniformes).
  - o Passerine birds (order Passeriformes) are variable in their susceptibility; some species show no signs of disease but excrete NDV while others may develop severe disease
  - o Reports of deaths in crows and ravens (genus *Corvus*) have been recorded

- o Acute ND has been recorded in penguins (order Sphenisciformes)
- The morbidity and mortality rates vary among species, and with the strain of virus
- Humans may become infected; manifested by unilateral or bilateral reddening, excessive lachrymation, oedema of the eyelids, conjunctivitis and sub-conjunctival haemorrhage

### ***Transmission***

- Direct contact with secretions of infected birds; principally via ingestion (faecal/oral route) and inhalation
- Fomites: feed, water, implements, premises, human clothing, boots, sacks, egg trays/crates, etc.
  - o Survival of agent is prolonged by presence of faeces; as in soiled egg shells
- Hatching chicks may be infected through egg for some NDV strains; transmission of highly virulent isolates is uncommon
- No clear evidence of role of flies in mechanical transmission

### ***Sources of virus***

- Respiratory secretions/discharges and faeces of infected birds
- All parts of the carcass
- Virus is shed during the incubation period, during clinical stages and for a limited period during convalescence
- Wild birds and waterfowl may act as reservoir hosts for lentogenic pathotypes of ND; subsequently, these viruses could become virulent following mutation upon establishment in domestic poultry
- Some psittacine birds have been demonstrated to shed ND virus intermittently for over 1 year and been associated with introduction into poultry

Footnote: Please check the OIE website for latest information.  
 ([www.oie.int/eng/maladies/en\\_technical\\_diseasecards.htm](http://www.oie.int/eng/maladies/en_technical_diseasecards.htm))

## **APPENDIX 2 - PERSONNEL QUARANTINE DECLARATION**

## (Farm Employee)

### EMPLOYEE CONTRACTS

#### Biosecurity Questions for Employees :

\* Note that poultry refers to chickens, turkeys, gamecocks, ducks, geese, guinea hens, quail, pheasants, partridge, peacocks, pigeons or any other birds, including pets.

1. Is there any type of poultry or any other birds at your residence?

.....

2. Do you or anyone residing with you work for any other poultry-related business, such as a chicken or turkey farm, hatchery, feed mill, pet store, poultry processing plant, zoo, etc.?

Circle **YES** or **NO**. If yes what type of business?

.....

3. Do you regularly visit anyone who owns or lives on a poultry farm?

.....

4. Do you live near property where poultry or other birds are kept?

.....

As an employee you must:

- a) Wear laundered clean clothes and shoes when arriving to the farm.
- b) Park in the designated parking area away from the barns.
- c) Disinfect the tires and wheels wells and undercarriage when entering the farm driveway.
- d) Not bring any family or friends without the manager's permission. They must strictly adhere to a biosecurity protocol as well.
- e) Put on coveralls, barn specific boots, head covering and sanitize your hands when entering the production area of the barn.
- f) Use all footbaths where provided.
- g) Not knowingly come into contact with other poultry.

**I have read and understand the above questions and requirements for employment.**

**I have read and understand the farm's biosecurity procedures.**

Signature of Employee : .....

Printed Name of Employee : .....

Date : .....

## **APPENDIX 3 – PEST CONTROL PROTOCOL**

### **I. PEST CONTROL**

Pest Control is very important in an overall effective biosecurity program. The most common pests found in poultry operations are rodents, insects and wild birds. Elimination and control of rodent and insect pests is essential to prevent the introduction and spreading of health problems. Pest control is also essential for good neighbor relations. **USE EXTREME CAUTION WHEN USING PEST CONTROL MEASURES AROUND CHILDREN, PETS AND OTHER ANIMALS! AND ALWAYS USE PESTICIDES ACCORDING TO THE LABEL DIRECTIONS.**

#### **A) Rodents (mice and rats)**

1. Rodent proof building, repair visible damage as it occurs.
2. Rodent proof feed storage.
3. Clean up feed spills immediately.
4. Employ regular baiting (follow label instructions) or trapping. Adapt your pest control program to activity and seasons. See Appendix VII Pest Control. Dispose of rodent carcasses immediately and carefully.

The best way to control rats and mice is to eliminate access routes into buildings by maintaining the building exterior and doorways. The second best control method is to remove all shelter, food and water sources. This includes cleaning up any spilled feed and making sure mortalities are stored in closed containers before being disposed of. A combination of poisoning, trapping and other methods can be used with good management practices. Rats and mice are sexually mature in three months and under normal conditions females produce up to 50 offspring per year that reach sexual maturity. Besides being potential disease carriers, rats and mice waste feed and can migrate to adjacent barns where they can spread a number of diseases between flocks and farms.

#### **Trapping**

Trapping is a practical way to remove rats and mice on relatively small poultry farms, but in commercial operations you need too many traps and it takes too much attention to remove dead rats and re-bait the traps to be practical.

If you use traps, many foods make good baits-peanut butter, doughnuts, cake, fresh crisp-fried bacon, cheese, raisins, strawberry jam, milk chocolate, apples, gumdrops, prunes and pineapple.

Enlarging the trap trigger with cardboard makes in more effective.

Place the traps across or near paths rats or mice normally use. Because mice travel only short distances, set traps every 10 feet. With rats, place traps every 25 to 50 feet. Mice will cross the center of a floor. Rats and mice most often move along walls.

Remove dead animals from the traps regularly.

## Rodenticides

Read the label carefully before opening a rodenticide container. Rodenticides are poisonous. Follow all directions and precautions.

Rodenticide is usually mixed with some bait material or materials. Selecting the right bait is important, especially where a plentiful supply of good feed is available, as in poultry houses. It is important to know which species of these rodents you plan to poison so you can choose the right bait material. Remember that if you use rodent control for rats only, mice will multiply rapidly once the rat population is under control.

- Quick Kill Poisons

1. Broiler House

In broiler houses, the best time to use quick-kill poisons is the first day or two after you remove the chickens. After selecting a quick-kill poison (and bait if mixing is needed), the important thing is deciding where to place it. Since rats and mice are accustomed to eating out of the feeder line, the best place to distribute poisoned bait is in or under the feeder line. You must remove the birds from house before beginning poisoning. Rats and mice tend to return to where they have been feeding and are more wary of anything new. They are more likely to accept the poisoned bait if it is near their customary feeding spots.

2. Cage Laying House

In occupied cage laying houses, place quick-kill poison baits on concrete walkways underneath feeder lines. Rats and mice are used to eating spilled feed from that area. Prepare baits the same way as suggested for broiler houses.

**Caution: Be careful to keep children, pets and other animals out of the houses while you use quick-kill poisons.** Cats, dogs or other animals eating dead rodents poisoned by anticoagulants may die. Therefore, consider penning such animals for a few days during the pest control period to protect them. It is a good policy to warn neighbors before using poisons. Because rats and mice can transmit diseases, use tongs or a glove to pick up the dead rodents.

- Anticoagulants (slow kill) poisons

Remember that with most anticoagulants, rats and mice must eat some of the poison daily for at least five days before they begin to die. Some information suggests that if rats and mice do not eat any anticoagulant poison for two days, they recover almost completely. Most recommended anticoagulant baits should be available continuously for at least two weeks.

1. Broiler House

In broiler houses, the day after you move the chickens, empty all feeders or feeder lines. Place about a half pint of anticoagulant poisoned bait in each feeder line or a feeder pan every 25 feet down the length of the house. You probably get best results from leaving the feeder line in a lowered position, but you may raise it back out of the way if bait stations are used. Check the line, and, where needed and fresh bait each day.

2. Laying House

In occupied cage laying houses, the best placement seems to be pouring a ¼ inch deep narrow band of the poison material on the walkways under the feeder lines. Rats and mice seem to accept bait on runways

better if it is poured in a narrow band under the feeder lines as opposed to placing it in small piles. The walkways along the outside and end walls will normally be the areas most frequented by rats and mice (especially mice) because it is easier for them to return quickly to shelter.

Try to poison rats and mice as soon as possible after you sell the hens and have removed the rodents usual food supply. Remove layer feed, sweep walkways, leave some water available, and place bait on runways and/or in feeder line (one feeder per set of cages) every 10 to 12 feet.

### 3. Slatted Breeder House

Grower/owner may use both quick-kill and anticoagulant baits under the slatted area any time so long as the birds do not have access to the baits.

## **B) Insects (flies, beetles and cockroaches)**

1. Eliminate or control fly breeding areas (wet manure, decaying birds, low lying areas or potholes where stagnant water can accumulate, etc.) especially in warm weather.
2. Remove mortality from the barn at least once a day and dispose of in a manner acceptable *under the Waste Management Act, Health Act, and Agriculture Waste Control Regulations of individual ASEAN Member Countries.*
3. Apply insecticides as necessary (misting, residual sprays, at clean out).
4. If spraying for flies, clean up all dead flies regularly.

**Flies:** Control of the common housefly (*Musca domestica*), lesser housefly and various other filth flies is often a real problem in warm weather. Houseflies are the most persistent and common fly pests, although other species such as lesser houseflies also are present. Controlling litter moisture is crucial to fly control. Houseflies are present because of poultry manure and exposed wet feed, which are ideal feeding and breeding materials. Houseflies do not bite poultry, but are severe nuisances, and can spread some poultry diseases. Migrating flies generate complaints from nearby residents. Manure management is most important for house fly reduction. Ideally, fly control should be approached through an overall management plan. This plan would include strict sanitation, screening of any openings that would allow entry of flies, and the use of a combination or rotation of insecticides and application methodology.

- Dry manure management consists of keeping the manure moisture at less than 35 percent. The dry manure will stack in cone-shaped mounds. In liquid manure pits, the manure should be liquefied rapidly to reduce fly breeding. Manure that remains partially solid in pits creates an ideal fly breeding site. In some management systems, agitating the liquid in pits has greatly reduced fly breeding.
- Chemical controls are valuable, but should be considered secondary to sanitation and manure management practices. Many poultry operations combine good manure management and one or more methods of chemical control. These include space or residual sprays, baits, larvicides, or feed additives. Recognize that it is practically impossible to eliminate all flies.
- Space treatment involves using a fine mist or fog (hot or cold) to kill flies on direct contact. The mist or fog is applied so that it drifts down upon fly-resting areas. There is no residual effect from space treatments. They can be applied

over birds, but be careful not to wet the birds. Avoid direct contact with eggs, water and feed.

- Residual fly control involves applying longer lasting insecticides to fly-resting areas. Flies are killed when resting on treated surfaces. Residual sprays may last two to six weeks under ideal conditions (in shade protected from rain and dirt). These are applied as a coarse spray to the point of run-off, or until surfaces glisten. Do not apply excessive amounts so that the spray puddles on the floors. Take special care not to contaminate feed.
- Insecticide baits can help control houseflies. Distribute dry baits along walls, windowsills or other areas away from feed and water. Make light applications and periodically sweep up dead flies and old bait. Apply liquid baits to burlap bags or paper. Organic phosphate insecticides used in liquid baits will decompose, leaving the sugar or syrup to attract flies, so remove and replace liquid bait residues regularly.

**Litter Beetles (Darkling Beetles):** Litter beetles are a serious pest affecting several types of poultry production systems. Litter beetles have a high reproductive rate, are difficult to control, are vectors of disease, cause considerable damage to insulation in poultry facilities, and may migrate from litter disposal sites to urban housing areas where they become a nuisance. Litter beetles may also consume considerable amounts of poultry feed if they are very numerous. These beetles also feed on poultry carcasses and healthy birds may feed on the beetles. In this way litter beetles become mechanical vectors of several diseases, including: Marek's disease, avian influenza, salmonella, fowl pox, coccidiosis, botulism and Newcastle's disease. These beetles are also reservoirs of and vectors of cecal worms and tapeworms.

- Applying insecticides after the building is emptied and the organic material is removed will reduce beetle numbers. Turn the heat up to bring the beetles out after applying the insecticide.

### **C) Wild Birds**

- Screen all openings into the barn.
- Do not put out wild bird feeders.
- Eliminate trees and shrubbery around the barns where practical.

Wild birds can be vectors for disease spread. The most common problem birds in poultry houses are sparrows and starlings. Wild waterfowl have been known to be carriers of avian influenza. Wild birds create a mess in poultry houses with their droppings and nests. They can consume or contaminate large quantities of feed and be carriers of diseases and parasites. Avoid situations that encourage birds to congregate near the poultry house. Avoid having trees, particularly those with dense foliage, or fruit trees near the poultry barns. Vines growing on buildings will also provide cover for unwanted birds and should be eliminated. Avoid excessive ground cover that may provide seeds and insects, which will attract birds and provide cover for rodent migration. Standing water resulting from poor drainage will attract wild birds, particularly waterfowl.

- Eliminate any openings or structural features on the outside of the barn that may provide a nesting site. Wire mesh on air inlets is essential.
- Eliminate spilled feed on the outside of the house, so birds will not be attracted to the area.
- The building should have all holes plugged or covered with mesh.





**APPENDIX 5 – VISITORS DECLARATION  
(POULTRY FARM ENTRY PERMIT)**

**Authorization for Entry to:**

.....

**Authorization for:**

.....

**Date of Entry:**

.....

---

**Entry to the farm is subject to the following conditions:**

- |                          |  |
|--------------------------|--|
| <input type="checkbox"/> | I do not have poultry, caged birds or pigs at home.  |
| <input type="checkbox"/> | I have not been in contact with any avian species or untreated poultry manure within 12 hours. |
| <input type="checkbox"/> | Wear protective clothing provided.   |
| <input type="checkbox"/> | Wear protective boots.   |
| <input type="checkbox"/> | Sanitize boots in the footbath provided on entering farm/shed.                                 |
| <input type="checkbox"/> | Sanitize hands before entering sheds.  |

I agree to the terms and conditions of entry.

**OBJECT OF VISIT** .....

**Name** .....

**Signature**.....

**Government representatives, inspectors and audit teams will need to make special arrangements with the owner if they cannot comply with the entry permit conditions.**

## APPENDIX 6 – MORTALITY MANAGEMENT PROTOCOL

### MORTALITY MANAGEMENT

Poultry mortality is a significant source of poultry and many human pathogens. Contact with poultry mortality can act as a significant bio-security risk to the spread of disease both within a farm and from farm-to-farm. The agents of the spread of infection can be people, pests, machinery, tools and vehicles.

#### ACTION PLAN:

##### 1. Handling

###### In-House Collection

- a) Mortality collection vessels should not be shared between poultry houses – each poultry house should have its' own clearly identified vessel with a tight fitting lid.
- a) After collection of mortality, collection vessel(s) should be scalded and removed from the poultry house immediately.
- b) Remember to use disposable gloves and wash your hands with hand sanitizer.

###### Storage – General

- a) Carcasses should be covered immediately after collection and not be left exposed.
- a) Carcasses to be frozen should be bagged and sealed immediately after collection.
- b) If mortality is to be stored before disposal, storage should be considered only for short time periods (several hours). Disposal treatment should be undertaken as soon as possible.
- c) Storage area must be free from flies, rodents and other pests.
- d) Disposal of mortality should occur on the same premise as the poultry house(s) and not moved to another premise.
- e) If mortalities are moved to another premise location, they MUST be in sealed containers during transit as mentioned above.
- f) Clean and disinfect the mortality storage vessel regularly.

2. **Mortality Disposal – Follow the regulations of the Veterinary Service Agency of the individual ASEAN Member Countries as well as the local municipal law.**

###### Composting

- a) Composters should:
  - be of a design and be operated in a manner to ensure proper composting temperatures are attained and full and rapid decomposition of carcasses occurs.
  - be checked for proper internal operating temperature (40 – 60 degrees Celsius) twice per week.

- not allow exposure of carcasses to disease vectors such as flies, birds, rodents or other animals.
- b) The area in which mortality composting takes place should be clearly identified with restricted access signage and no one should enter the area without taking proper biosecurity measures.
- c) Personnel should not re-enter the poultry houses after entering the composting area without implementing full biosecurity measures.

#### Incineration

- a) The area in which incineration takes place should be clearly identified with restricted access signage. No one should enter the area without taking proper biosecurity measures.
- b) The capacity of the incinerator should be pre-determined and displayed in the view of the farm employee in order to prevent exceeding capacity.
- c) Ensure complete incineration each run.
- d) Keep incinerator clean and maintained.

#### **Storing in freezer for pickup**

- a) The area in which the freezers are located should be clearly identified with restricted access signage. No one should enter the area without taking proper biosecurity measures.
- b) After bagging and sealing, carcasses should be placed in the freezer immediately.
- c) Mortality collection service providers should not pick up farm mortality directly from the farm freezer.
- d) Farm mortality should be taken to and left at a designated pick up point well away from the poultry houses and production area.
- e) Mortality left for pick up should be stored in a vessel impervious to animals and weather.
- f) Mortality should not be left outside the gate for pick up for more than four hours.

#### **Note:**

This protocol is intended to deal with biosecure mortality management and is **NOT** intended to deal with mortality management related to environmental issues.

## APPENDIX 7 – DIAGNOSTIC SUBMISSION PROTOCOL

### DIAGNOSTIC SUBMISSION

If a disease is suspected in a poultry flock based on a **significant unexplained change** in mortality or production parameters, the producer should initiate a diagnostic investigation by requesting the assistance of their poultry veterinarian and/or submitting appropriate samples to a veterinary diagnostic laboratory. To ensure that samples yield the best possible results they must be handled in a way that **prevents contamination** and **preserves the viability** of the causative organism.

**Diagnostic samples must be transported in a manner that is biosecure and prevents the potential spread of infectious disease off the farm.**

### ACTION PLAN:

#### 1. WHERE TO SUBMIT SAMPLES.

- a) Request that your poultry veterinarian visit the farm and have him/her provide a tentative diagnosis and submit the appropriate samples.
- b) The producer or service person can take the appropriate samples (dead/affected birds or blood/tissue samples) and submit them directly to the office of their poultry veterinarian or to the provincial veterinary diagnostic laboratory. This can be done directly in person or through a courier service.

#### 2. WHAT TO SUBMIT

- a) Fill out the submission form COMPLETELY and/or
- a) **Provide all relevant information** regarding the farm and current flocks :
  - Producer/Vet/Service Industry **contact & billing information**. Clearly identify who gets billed, who gets the preliminary reports and those who should receive a copy of the final report when completed. Identify the **primary contact person** (your veterinarian is recommended).
  - Farm location and complete flock description (age, species, sex, flock size, recent vaccination & treatment history).
  - Complete description of what the problem is (mortality, production drop, reduced water consumption, etc), including date/time of onset, duration, extent (percentages) and whether things are getting worse or better over a defined period of time.
- Offer your suspicions as to what you think the problem might be. Feel free to request specific tests.
  - b) Submit **REPRESENTATIVE BIRDS** or samples from representative birds. If unsure what samples to take, call your veterinarian or the Animal Health Centre for advice. Record submission date & reference number in the Flock Health Record.
  - c) Submit a history of the flock. An inadequate history at the time of submission may delay or confound the final diagnosis.

### 3. SAMPLE HANDLING

- a) **Blood:** Samples should be **clearly labeled** and submitted in tube racks or cinched together with an elastic band and placed in a closed plastic baggie. Ensure that the tubes and containers are clean and free of blood.
- b) **Swabs:** Swabs should be appropriate for the testing requested. Example ; bacterial culture swabs for Staphylococcus, pooled dry swabs for PCR. Please call the testing laboratory if unsure.
- c) **Tissues:** Fresh tissues should be clearly labeled and placed in separate plastic baggies. Multiple tissues can be pooled in formalin.
- d) **Dead Birds:** The Animal Health Centre will examine up to 5 birds per submission. Birds should be **fresh dead** (<24 hours) and have been kept chilled. Decomposed birds will be discarded. Only if there is a delay in submission should carcasses be frozen.
- e) **Live Birds :** Submit birds **showing clinical** signs ; avoid submitting cull birds. Live birds not only provide fresh diagnostic specimens, they allow the opportunity for blood sampling. Transport birds in a **CLEAN** feedbag or box that has sufficient space and ventilation to prevent overheating and suffocation. **DO NOT** submit live birds in plastic bags. *Even though these birds will be euthanized birds should always be treated and transported in a humane manner.*

### 4. WHAT TO EXPECT

- a) Preliminary findings based on the gross lesions seen at necropsy will be forwarded to the **primary contact person(s)** within 24 hours (goal is same day) by phone or fax. It is important that the veterinarian be one of the first people informed since they are the ones that will be interpreting the results and providing treatment plans for your flock.
- b) **Please feel free to call in at any time for updates.**
- c) During the interim between submission and preliminary test results your veterinarian may recommend initial treatment based on a tentative (suspected) diagnosis formed from the clinical evaluation. This treatment may have to be modified as new test results become available.
- d) Adopt enhanced on-farm biosecurity protocols (containment) and suspend all unnecessary traffic. **See Producer Self-Quarantine Protocol.**
- e) A printed final report will be sent out by fax or mail once all testing has been completed. Please remember that some tests take longer than others to complete.
- f) Add copies of all diagnostic reports to the permanent Flock Health Record.
- g) Continue to monitor for disease reoccurrence in the same or subsequent flocks and be prepared to submit follow-up samples.

## APPENDIX 8 – MANURE MANAGEMENT PROTOCOL

### MANURE MANAGEMENT

#### (Producers, Cleanout and Manure Hauling Contractors, Equipment Representatives)

Poultry manure is a significant source of poultry and many human pathogens. Contact either directly or indirectly through aerosol or dust from manure can act as a significant biosecurity risk to the spread of disease from farm to farm. The agents of the spread of infection can be people, machinery, tools, vehicles and environmental forces.

#### **ACTION PLAN:**

##### **1. Poultry House Clean Out – Machinery Delivery and Pickup**

*\* Be sure that all contractors coming onto the premise completely fill out the Visitor Log.*

#### Trucks

- a) Trucks should be clean before entering a farm premise.
- b) After manure trucks are loaded, all loads should be secure and tarped to prevent escape of manure off the truck during transit.

#### Equipment

- a) Manure contractor or equipment representative should arrange for delivery time of equipment with the farmer so that the farmer can be present when the equipment is delivered.
- b) Producer must ensure that equipment and **ALL** vehicles, including the vehicle that brings equipment to the farm, are clean upon arrival to the farm i.e. no residual manure from last farm.
- c) Equipment used in the poultry house should be cleaned in an area away from the poultry houses to prevent recontamination before it leaves each farm.
- d) All equipment moved between farms must be both washed and sanitized.

##### **2. Poultry House Clean Out – Machinery Operation**

- a) Every attempt should be made to operate machinery in a manure that causes the least escape of dust, either through adjusting for wind conditions at time of handling or handling manure in an area or manner less affected by factors that would promote dust generation and movement.
- b) Poultry house fans should be set to operate at the lowest level possible level during cleanout operations to keep dust in the poultry house as much as possible.
- c) Workers should wear protective equipment at all times when handling manure.

##### **3. Day to Day Manure Management**

- a) Store manure at least 15 feet from the poultry house.
- b) It is highly recommended that the manure be stored for 3 weeks before being moved off the farm. If this is not possible, then consider the manure as possibly infectious material and take heightened biosecurity measures when moving it.

- c) Keep stored manure dry to reduce fly populations and enclosed to control access by vectors such as birds and rodents. **Follow all Provincial and Federal Legislation.**
- d) Do not haul manure handling equipment from farm to farm without cleaning and disinfecting (if equipment will be used in-poultry house).
- e) Allow at least 24 hours after cleaning (and disinfecting) equipment before moving to another premises.
- f) Do not place mortalities in the manure storage – dispose of them in a proper composter designed for that purpose or with another approved disposal process.
- g) Store manure on top of an impermeable (low porosity) surface so that it can be sanitized if necessary.
- h) Try to confine manure handling operations :
  - i. to a time when there is no flock present.
  - ii. away from yours and your neighbour's poultry house air inlets.
  - iii. to a short period of time to reduce exposure to biosecurity issues.
  - iv. workers should wear protective equipment at all times when handling manure.

While this manure management protocol is NOT intended to deal with manure management related to environmental issues, it should not conflict with requirements of Ministry of Natural Resources and Environment, Ministry of Industry, and/or local municipal waste management regulations and guidelines.

## **APPENDIX 9 - PROCEDURE WHEN GOING TO A QUARANTINED FARM**

A record should be available for what was taken, by whom, and to go where. Personnel going to a quarantined farm would be expected to have written approval by the production manager or company veterinarian. If approval is over the phone, laundry personnel should register this approval in the same logbook as for the one used to keep track of clothing.

In order to avoid bringing contaminated material to the central facilities, all personnel should proceed as follows:

1. If shower facilities are available at field office, they should seal clean personal clothing in a resistant garbage bag and take it through shower and to the site in this sealed bag.
2. Shower and put on clean biosecurity clothes provided for the farm visit.
3. After completing work on the quarantine farm, they should go to a pre-approved site (other than the field office) to take a shower and put on the clean personal clothing from the sealed bag.
4. Clothing used on the farm should be washed at this site, or any other approved facilities before being returned to the field office, where it will be treated as dirty (i.e., will be rewashed at the field office laundry facilities). Boots will be washed and disinfected at the remote site and will be disinfected again upon arrival at the field office.
5. Laundry room personnel should wear disposable gloves when handling clothing that has been used on a quarantined farm or wash hands carefully before handling any other clothing after that.

If personnel that have visited a quarantined farm shower at the field office, they should proceed as a group (nobody else allowed on the “incoming” side of the shower facilities, until they have all gone through showers, and the laundry room personnel have had the opportunity to wash the room: wash and disinfect floor, benches, etc). A sign will be posted to inform other personnel of the current situation.

Note that the clean clothes drop off is only a temporary holding area and it should have a cover.

***The shower is the line between clean (farm environment) and dirty (outside environment)***

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### **Enhanced Biosecurity Regulations for Visitors (additional to the above):**

- Visitors must be accompanied by an authorized company or farm representative
- Visitors will not have visited other poultry or swine farms 2 days before the visit.

## **APPENDIX 10 - BIOSECURITY PROTOCOL FOR POULTRY HEALTH PERSONNEL WHEN AN OUTBREAK OCCURS**

### ***When an outbreak occurs***

It is essential to have an effective plan of action to ensure safe entry to and exit from a farm experiencing an infectious disease outbreak. The same protocol should apply even if only a suspicion of infection is present.

Poultry health personnel must follow a stringent biosecurity protocol when entering and exiting the premises:

1. The vehicle should be parked at least 60 meters from the houses or outside the entrance to the contaminated area.
2. Vehicle windows should be kept closed to prevent insects from entering.
3. The vehicle used should have a “clean” and a “dirty” compartment, the latter being used to store any potentially contaminated equipment. Any material placed in the dirty compartment must be removed after the farm visit to allow washing and disinfection and to avoid carrying such material from farm to farm. For the same reason, it is recommended to keep only essential supplies for one visit at a time in the vehicle.
4. Personnel should change into clean fabric coveralls or disposable coveralls before entering the premises.
5. Disposable head coverings and disposable or rubber boots that can be disinfected must be worn.
6. If laboratory specimens are collected, they must be placed in sealed containers (plastic bags). Any equipment or material used on the premises should either be disposed of on location or should be placed in plastic bags and handled like the lab specimens (i.e., kept in contaminated section of vehicle).
7. Once all material and equipment have been safely stored, all potentially contaminated biosecurity clothing should be removed and sealed in a plastic bag prior to entering the vehicle as previously described.
8. Aerosol pesticide should be used in the vehicle to kill insects that may have entered.
9. Each individual should wash all exposed areas of the body using an antiseptic soap prior to entering the vehicle (mainly arms, hands, face, and blow your nose).
10. On completion of a trip, the vehicle should be required to return to a washing station for inside and outside cleaning and disinfection.
11. Persons who have contact with infected or suspicious flocks should bathe or shower, including hair, and change all clothing before having any further contact with other poultry, poultry farms, poultry businesses, or other persons who care for or have contact with poultry. In the case of serious or exotic diseases, a waiting period of at least 72 hours should be imposed prior to having further contact with other poultry, or poultry premises.
12. If a vehicle is far from a company wash station, a commercial car wash may be used.

## APPENDIX 11 EMERGENCY CONTACT LIST

### EMERGENCY CONTACT LIST

\* Please fill in your emergency contacts in the spaces below!

Emergency Contact List		
NAME	ORGANIZATION	PHONE NUMBER
	Farm Manager	
	Farm Employee	
	Poultry Veterinarian	
	Alternative Poultry Vet	
<b>Director</b> National Diagnostic Laboratory	<b>e.g. National Institute of Animal Health (NIAH), DLD</b>	02 – 5798916 8:30 – 4:30 (M-F)
<b>Director</b> Disease Control Division	<b>e.g. Bureau of Disease Control &amp; Veterinary Services, DLD</b>	02- 6534935 8:30 – 4:30 (M-F)
District Veterinarian	e.g Dept. of Livestock Development	
	Marketing Board	
	Producer Association	
	Feed Company	
	Hatchery	
	Processor	
	Equipment Repair	
	Computer Support	
	Insurance Company	
	Catching Crew and/or Servicing Crew	
	Shavings Company	



