

# **Freeranger Eggs**

## **Biosecurity**

**Poultry Disease Risk  
Management on a free range  
egg farm**

**2013**

## **DEFINITION OF BIOSECURITY**

Biosecurity can be defined as a set of programmes and procedures that will prevent or limit the build up and spread of harmful microorganisms and pests in poultry houses, and poultry production areas. The biosecurity programme is the implementation of procedures to inhibit the movement of infectious agents harmful to poultry into, within or from a facility containing poultry.

The extent to which microorganisms are discharged from infected birds depends on the degree to which the organisms multiply in the bird, whether the infection is modified by the bird's immune system and if the environmental/husbandry conditions to which the birds are exposed depresses the bird's immune response.

Whether harmful discharged microorganisms can infect other birds and cause disease depends on the resistance of the microorganisms to the external environment, such as temperature, humidity and sunlight; whether they can contaminate aerosol particles, equipment, vehicles, manure, dead birds, people, feed or water; if they can be spread by other animals, rodents, birds and insects; how far these carriers can travel and whether they come in close contact with poultry.

Biosecurity programmes and procedures may include: controls on movement of poultry, equipment, people and vehicles between and into farms; separation of poultry from other poultry species, non-poultry bird species including wild birds, rodents and animals; geographical isolation or other means to minimize aerial dispersal between farms; control of insects that transmit poultry diseases; vaccination to enhance immunity; hygiene practices and disinfection procedures to reduce infection levels; eradication of harmful microorganisms; and medication to prevent or treat bacterial or protozoal diseases.

## **CONDUCT A FARM RISK ASSESSMENT**

- Look at how infectious agents may be introduced to your free range farm
- Look at how to prevent the spread of disease across flocks on your farm
- Ensure you minimise the potential disease risk to humans from eggs.

## **HOW ARE DISEASES SPREAD?**

There are many ways that diseases can spread to farms. Some of the more likely methods of disease transmission are:

- movement of birds and equipment – particularly second-hand packing material – between farms;
- movement of people between farms;
- movement of infected poultry products (e.g. eggs);
- windborne transmission;
- rodents (e.g. rats, mice);
- contaminated water supply;
- wild bird access to birds;

Basic practical precautions help prevent the entry of most diseases onto a farm. There are some diseases for which these precautions may be insufficient to prevent entry but just because prevention may be difficult is no reason to stop a farm from taking basic practical precautions.

## **BASIC BIOSECURITY**

### ***THE FARM***

Keep the farm clean and free of debris, particularly around the shed area and egg room. Stockpiles of poultry manure should not be kept in these areas. This minimises habitat for rodents and insects, and maximising the ability of the sun (UV light) to ‘disinfect’ the shed surrounds.

The area leading to the shed should have appropriate signs to stop customers wandering into the shed.

Because free range chickens require free access to the outdoors, bird-proofing the shed and range area is practically impossible. Contact with wild birds – particularly wild water birds – can be minimised by making the free range enterprise less attractive to them; e.g. by placing feeders inside the shed, rather than in the open range where wild birds will have easier access. Placement of bird netting in critical feeding areas may also reduce the risk. The netting should allow the entry of chickens but limit entry by wild birds.

The shed should be waterproof, as damp areas in the shed and wet feed in the troughs may attract flies, and will also provide a suitable environment for bacterial and fungal multiplication.

Adequate facilities for the disposal of dead birds should be in place, using methods that comply with environmental guidelines.

The feed preparation area should be as bird-proof and animal-proof as possible, to prevent contamination of feed.

Unnecessary large bodies of water on the farm should be avoided, as they may attract wild waterfowl to the vicinity. Access of free range chickens to dams and creeks should be prevented by fencing off these areas.

The water supply to the shed (e.g. for drinking and fogging) should be either mains water, good quality bore water, or be treated by an appropriate method such as chlorination, UV irradiation or ozonisation. Never use untreated dam water.

New litter (shavings) should be accessed from known, reputable sources, and stored in a bird-proof location.

Only new egg fillers or cleaned plastic egg fillers should be used. Customers should be discouraged from returning empty egg fillers to the farm.

Movement of eggs between farms should be avoided if possible.

Eggs sourced from another farm (e.g. to make up for a temporary shortage, or for other reasons) should be kept in a separate section of the farm or in the egg storage area.

Soft-shell, cracked or unusable eggs should not be dumped in or outside the shed. They should be buried, composted or removed from the farm as part of the dead bird pick-up, or by other suitable arrangements.

### ***OPERATIONAL STANDARDS***

#### **Vaccination**

An effective vaccination program appropriate to the diseases found in the area is one of the most important aspects of biosecurity, regardless of any other biosecurity measures taken at farm level. Vaccination against endemic diseases – such as Marek’s disease, Newcastle disease infectious laryngotracheitis (ILT), infectious coryza, mycoplasma, fowl pox, infectious bronchitis, avian encephalomyelitis and egg drop syndrome 76 – should be considered as routine farm practice.

Vaccination by an outside crew can carry a significant risk if not done with appropriate biosecurity precautions.

Professional vaccination crews should have their own biosecurity code, which should be examined by the farmer prior to the visit. It is essential that vaccination crews do not visit more than one farm on the same day, and that all their equipment is sanitised before the next 'job'. Vaccination crew personnel should sign the visitors' book and declaration.

### **Sick and dead birds**

Sick birds should be treated as soon as possible, or removed from the flock. The presence of sick birds may compromise the ability of the flock to resist disease, by causing the disease to build up beyond the threshold level.

Dead birds should be removed from the shed as soon as possible, and disposed of in a manner that complies with environmental guidelines. Immediate burial, incineration or composting should be carried out.

### **Water supply**

If water treatment is necessary (e.g. where the water supply is surface water or poor quality bore water), the efficiency of the treatment facility needs to be regularly monitored. When chlorination is used, a chlorination record chart should be utilised to document that the water has been adequately treated. Chlorination requires a level of 5 ppm chlorine over the 1–2 hours holding time.

It may be advisable for drinking water, like feed, to be accessed inside the shed; or, if watering stations are required outside, they should be of a type that cannot be easily accessed by wild birds (e.g. a nipple system). It is important to place any outside watering system in a cool area, as chickens will not drink hot water.

The watering system should be maintained, in order to prevent leakage and the creation of wet patches within or outside the shed. Wet areas may result in a build-up of flies, provide an ideal environment for bacterial multiplication, and may also attract wild birds.

Water tanks should be checked regularly to ensure that they remain bird-proof.

### **Rodents**

Baiting stations should be placed around the farm in a secured manner that allows access by rodents and prevents access by other animals. The baiting stations should be checked at least weekly, and fresh bait placed monthly (or more often if required). An activity logbook for rodent control should be maintained.

Feed spills must be cleaned up as soon as they occur.

In most free range enterprises, long grass should not be an issue around sheds, as chickens tend to take care of this aspect themselves. If this is not happening, however, the grass around the shed site should be kept cut, as long grass attracts rodents, and favours the survival of bacteria and viruses.

### **Visitors**

Many egg farms sell eggs and manure directly to the public. In such cases, every effort should be made to stop customers entering the free range area. Free range farms are more vulnerable than conventional sheds to contamination by visitors. People can carry contaminants on soiled footwear, and these can persist in the soil for many weeks or months.

Neighbours, friends, sale representatives and other people should be kept away from the free range area unless their presence is essential.

Visitors who are required to enter the free range area (e.g. veterinarians, maintenance and service personnel) should be recorded in the visitors' book and asked to sign a visitor declaration – unless an emergency exists.

Producers may insist that visitors who have visited other farms on the same day do not enter the sheds or range areas.

Visitors entering the free range area shed should be provided with protective clothing, if they do not carry their own set of unused disposable protective coverings. The protective clothing should include overalls and plastic overshoes or boots. In general, every farm should have sufficient protective clothing for 2 to 3 visitors.

Tools taken into the free range area must be clean and free of organic matter and dust.

Any crew delivering pullets or day old chickens to the farm should sign a declaration that they have not been on another farm on that day (i.e. split delivery). If it is not possible to avoid split deliveries, the delivery crew should shower and completely change their clothing before being allowed into the free range area sheds.

Any crew picking up end of lay hens for processing or transfer to another farm should comply with the same conditions as above, unless they are depopulating the entire farm.

The drivers of feed delivery vehicles who are required to enter the free range area or feed mixing area should be provided with disposable plastic overshoes if they need to get out of their vehicle, particularly in the area where feed is mixed.

Customers should never be allowed to enter the free range area to collect eggs.

### **Other animals**

Good fencing is required around free range enterprises, to prevent entry by animals such as dogs, foxes and cats. In many situations, however, fencing alone is insufficient to stop such intrusions; therefore, some free range enterprises keep specially-trained dogs with the chickens, as protection against other animals, and also against unauthorised human entry. Guard dogs such as these are not regarded as a biosecurity risk, but rather as a biosecurity tool.

### **Hygiene**

Hygienic conditions on the farm and in the egg storage and grading facilities will minimise the risk of bacterial contamination of eggs. It is recommended that free range farms:

- keep the farm and egg grading room clean and tidy at all times;
- control rodents and flies on the farm, particularly in the egg grading facilities;
- make sure employees are familiar with the basic principles of food hygiene – an operational manual with a checklist of routine hygiene and husbandry standards is recommended;
- make sure the egg grading system is clean and properly maintained, as dirty egg equipment has the potential to dirty numerous eggs;
- regularly remove cobwebs and dust from inside the shed and egg grading room;
- use new, clean egg fillers;
- don't allow domestic animals inside egg grading rooms;
- regularly clean nest boxes in sheds;
- maintain a record of the checks undertaken;
- ensure manure/litter in the shed is low in moisture, as the moisture content of litter/manure is an important factor in the multiplication of some bacteria.

## PERSONNEL

Producers and their employees should not have contact with other poultry, emus, ostriches, pigeons, caged birds or poultry manure from other farms in the 24 hours before arriving at the farm. Such contacts may result in the introduction of a serious disease onto the farm. Farm employees should complete a personnel quarantine declaration.

Backyard flocks have the potential to introduce a number of diseases into a commercial flock, including *Salmonella enteritidis*, egg drop syndrome, infectious bursal disease, tuberculosis and Newcastle disease. Pigeons and cage birds are significant potential sources of psittacosis.

The farm's biosecurity must be evaluated in the context of the potential risk, and what risk the farmer is prepared to accept.

Farm clothing, particularly boots, should not be worn off the farm; nor should street clothing be worn on the farm.

## AIRBORNE INFECTION

Very little can be done to mitigate the airborne spread of infection on most farms, apart from the original placement of a farm at a safe distance from other poultry enterprises, and the planting of trees and large shrubs to filter and block some of the airborne spread. Proper management of free range pastures could, however, reduce the airborne spread associated with dust.

The airborne spread of infections usually requires a large transmitting flock. Two elements mitigate the airborne risk to genuine free range farms: their small size compared with intensive enterprises, and the fact that most free range farms are in districts with a low-density poultry population.

## HIGH RISK BIOSECURITY

High risk biosecurity measures are recommended during outbreaks of significant diseases, such as Newcastle disease, avian influenza, virulent infectious bursal disease (IBD), *Salmonella enteritidis*, and egg drop syndrome.

In cases such as avian influenza, Newcastle disease and virulent IBD, specific designated risk areas will be declared, and biosecurity measures in these areas will be decided through consultation between governments and industry.

Farms outside the officially designated risk area are advised to upgrade their biosecurity to a higher level than normal.

Visits to the farm should be discontinued, unless absolutely necessary for the purpose of surveillance or emergency repairs. Any vehicle that must enter the farm should be thoroughly disinfected before entering.

Movement of birds, equipment and eggs between farms should cease and the movement of manure off farms should be discontinued.

**This Biosecurity document is based on documentation by the NSW Department of Primary Industries the US Poultry & Egg Association and the Australian Egg Corporation Ltd.**