Best Practice
in the Breeder House

Biosecurity

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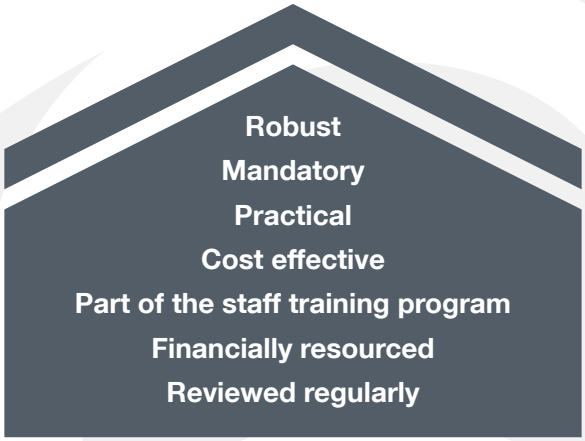
Introduction

1 Biosecurity creates hygienic conditions within the poultry house to minimize the adverse effects and to prevent the spread of disease, optimize bird performance and welfare, and provide assurance on food safety issues.

Best Practice for Biosecurity

A biosecurity program should be:



Potential routes of disease exposure:

1 Site cleaning must remove all potential poultry and human pathogens and minimize the number of residual bacteria, viruses, parasites, and insects between flocks.

2 Providing a period of downtime in between flocks is key.

Cleaning and Disinfection

Step 1.
Plan well
Draw up a plan detailing dates, times, labor, maintenance and equipment requirements prior to depleting the farm.

Step 2.
Insect Control
As soon as the flock is removed and whilst the house is still warm spray the interior of the house with a locally recommended insecticide. Wear appropriate protective clothing. A second treatment should be applied before fumigation.

Step 3.
Remove Dust
Remove all dust and cobwebs from interior surfaces and equipment.

Step 4.
Pre-Spray
Wearing appropriate protective equipment, spray detergent solution throughout the house interior to dampen down dust. Close the curtains in open-sided houses first.

Step 5.
Remove Equipment
Remove all equipment from the house and raise automatic feeders and drinkers.

Step 6.
Remove and dispose of litter
Litter must be removed to a distance of at least 3.2 km (2 miles) and disposed of in accordance with local government regulations.

Step 7.
Washing
Use a pressure washer with a foam detergent. Ensure the detergent is compatible with the disinfectant to be used. Rinse with hot water. Staff facilities should be cleaned at this stage as well. Wash out and disinfect the egg store (humidifiers should be dismantled, serviced and cleaned).


Step 6


Step 7


Step 7

Cleaning and Disinfection

Step 8.
Clean the water and feeding systems

Water System

- Drain pipes and header tanks.
- Flush lines with clean water.
- Scrub the header tank to remove biofilm and scale, and drain.
- Refill tank with water and approved sanitizer (sanitizer must be approved for use with the drinking equipment and be used at the correct dilution).
- Run the sanitizer solution through the drinker lines.
- Make up header tank to normal operating level with additional sanitizer solution. Replace lid and leave for a minimum of 4 hours (or as long as recommended).
- Drain and rinse with fresh water.
- If physical cleaning of water pipes to remove biofilm is not possible, between flocks biofilm can be removed using high levels (140 ppm) of chlorine. Water lines must be flushed completely before birds drink.

Feeding System

- Empty, wash, and disinfect all feeding equipment.
- Empty bulk bins and connecting pipes and brush out. Clean out and seal all openings.
- Fumigate wherever possible.

Step 8

Empty and clean out bulk bins and connecting pipes

Step 9.
Repairs and maintenance

Structural repairs and maintenance should be completed while the house is empty and clean.

Step 10.
Disinfection

Use an approved disinfectant which is effective against specific poultry bacteria and viruses. Follow manufacturer's instructions at all times. Most disinfectants are not effective against sporulated coccidial oocysts. Selective coccidial treatments should be used by trained staff only.

N.B. Disinfectants are ineffective in the presence of dirt and organic matter and should not be applied to wet surfaces (this will cause dilution).

Step 11

Step 11.
Fumigation

Where permitted, formalin fumigation should be completed by trained personnel, following local safety legislation and guidelines. Fumigate as soon as possible after disinfection; surfaces should be damp and the house warmed to a minimum of 21°C (70°F) and an RH of less than 65%. Seal the house for 24 hours (no entry permitted). Ventilate the house to reduce formalin levels to 2 ppm before entry to the house is permitted. Repeat fumigation after the litter has been spread.

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Cleaning External Areas

1 **External areas around the house should be cleaned and disinfected thoroughly as well.** All concrete areas should be washed and disinfected as thoroughly as the inside of the house. Particular attention should be paid to:

- The area under the ventilator and extractor fans.
- Under feed bins.
- Access routes.
- Door surrounds.
- Gutters.

2 **Ideally, the house should be surrounded by an area of concrete or gravel** (1-3 m / 3-10 ft in width). If this is not possible, the area around the house must be free from vegetation and machinery / equipment, have a level surface, and be well drained.


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Evaluating Farm Cleaning and Disinfection Efficacy

1 **Monitor the efficacy of cleaning and disinfection regularly.** Complete bacterial and salmonella counts at least once a flock. Monitoring trends in salmonella / bacterial counts will allow continuous improvements in farm hygiene to be made.

2 **If cleaning and disinfection has been effective, no salmonella species should be isolated during sampling.**


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Water Quality

1 **A test of total water quality should be done at least once a year.**

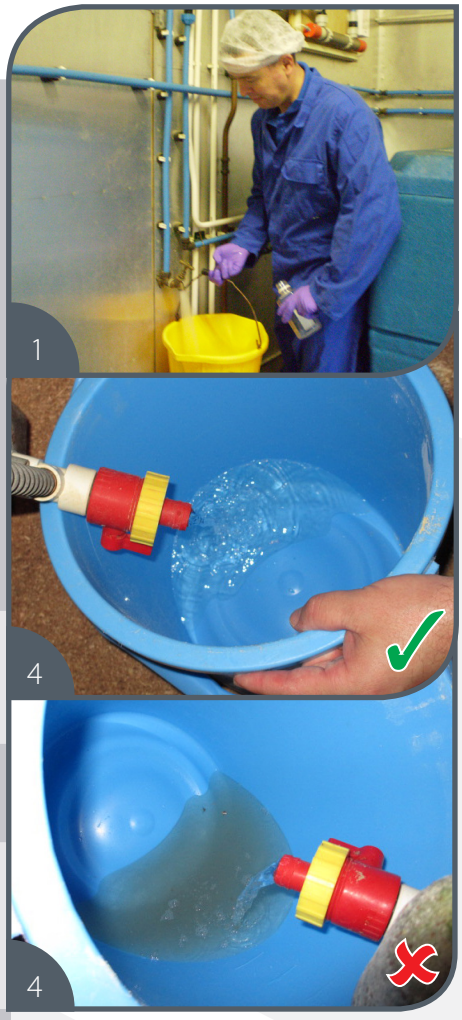
Criteria	Concentration (ppm)
Total Dissolved Solids	0-1000
pH	6.5-8.5
Sulphates	50-200
Chloride	250
Potassium	<300
Magnesium	50-125
Nitrate Nitrogen	10 (maximum level)
Nitrates	trace
Iron	<0.3
Fluoride	2 (maximum level)
Bacterial Coliforms	0 cfu/ml
Calcium	600 (maximum level)
Sodium	50-300

2 **Chlorination to give between 3 and 5 ppm free chlorine at drinker level is effective in controlling bacteria. Ultraviolet light can also be used to disinfect water.**

3 **Where hard water is a problem (iron levels > 3mg / l), filter water with a 40 - 50 micron filter.**

4 **It is a good idea to routinely complete a visual check of the water supply throughout the life of the flock.** Simply run water out of the end of the line and check for clarity. If a high level of dirt is visible, water line sanitation methods are not appropriate and need to be altered.

5 **Routine use of an approved sanitizer throughout the life of the flock is recommended**. Disinfecting the water lines once a month and routinely flushing them with clean water is good practice.



Preventing Diseases Transmitted by Humans

1 **Prevent unauthorized access to the farm.** The perimeter of the farm should be fenced and no entry signs posted.

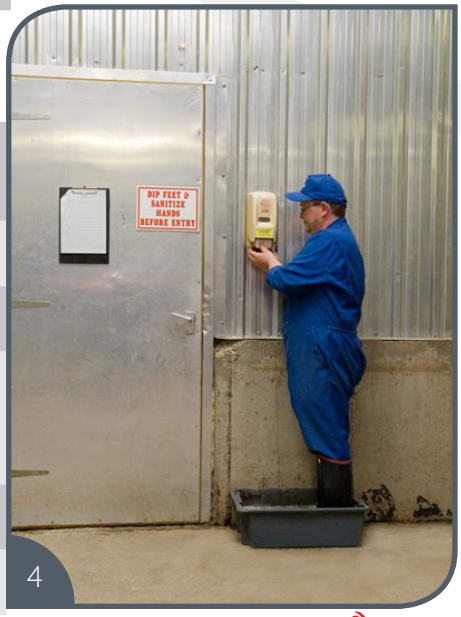
2 **All people entering the farm should shower on and change clothing.**

3 **Maintain a visitor record.**

4 **Hands and boots should be sanitized when entering and leaving individual houses.** It is also a good idea to change to clean boots once inside the house.

5 **Clean and disinfect all equipment before bringing it into a house.**

6 **Visit the youngest flocks first.**



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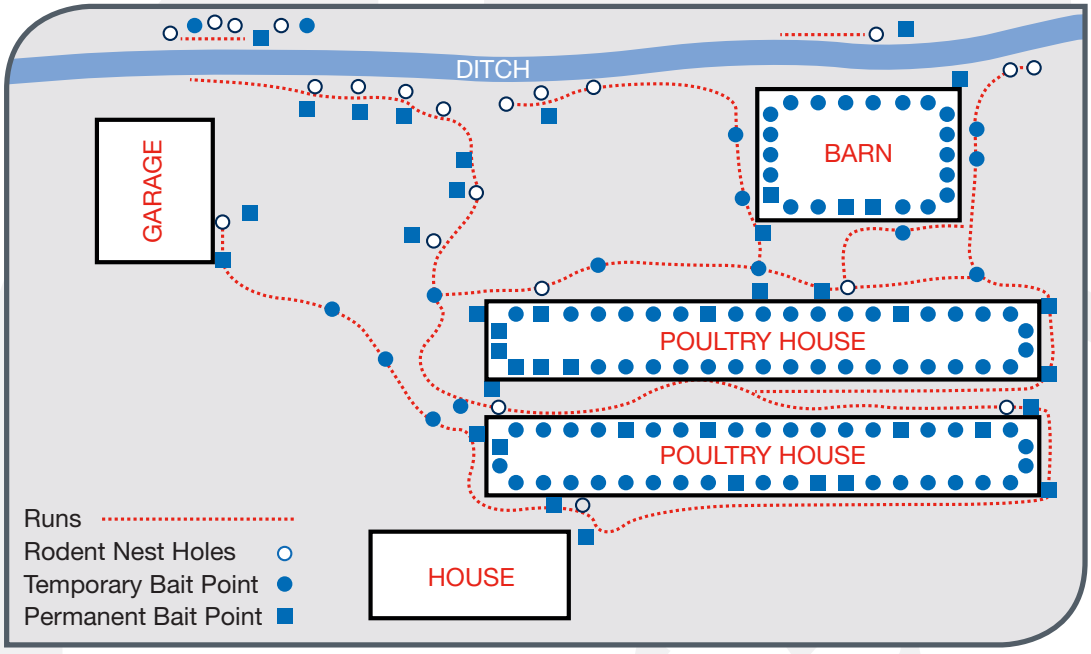
Preventing Disease Transmitted by Animals

1	**Wherever possible use an 'all in/all out' cycle.**
2	**A period of downtime between flocks will reduce contamination.** The longer the downtime the lower risk of disease transmission between flocks. A minimum downtime of 3 weeks is recommended, but the exact downtime will depend on the size of the farm.
3	**Keep wild birds out of all houses.**
4	**Do not leave equipment, building materials, or litter lying around.**
5	**Clean-up feed spills immediately.**
6	**Store litter materials and feed inside an enclosed storage bin or building.**
7	**Maintain an effective rodent / vermin program.**

Example of an effective rodent baiting plan:



Every attempt has been made to ensure the accuracy and relevance of the information presented. However, Aviagen accepts no liability for the consequences of using the information for the management of chickens.

For further information on the management of Aviagen stock, please contact your local Aviagen representative.

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