

# Biosecurity for the Poultry Industry

*June deGraft-Hanson  
Extension Poultry Specialist*

## What does biosecurity mean in the poultry industry?

Biosecurity means security against biological agents and specifically against infectious biological agents. These biological agents include bacteria, viruses, protozoa, fungi, parasites, and any other agents capable of introducing an infectious disease into a poultry flock. Biosecurity therefore means maintaining a flock, poultry house, or premises used to raise poultry so that infectious agents do not have a chance to enter to cause disease. If agents do enter, the producer will use management practices that will keep their effect to the very minimum.

## Why is biosecurity important for the poultry industry?

In the past when practically everyone had a backyard flock and there was plenty of land available, there were not too many intensive poultry production farms. With the decrease in the number of farmers and the migration of people into cities and nonagricultural work, fewer people now raise poultry.

In order to do this effectively and profitably, large numbers of birds are raised in poultry houses on individual farms. As a direct result, when an infectious agent enters a poultry house or farm, there is the probability for widespread dissemination within the house, on the farm, and to other farms if it is not contained.

## Who is responsible for biosecurity on poultry farms?

Everyone who works directly or indirectly with the industry is responsible for biosecurity measures. Biosecurity is effective only if practiced diligently by everyone. When a devastating disease hits a poultry community, practically everyone is impacted. Poultry farmers can lose stock, and houses may have to be empty while under quarantine or while tests are conducted. As a result, normal purchases are suspended during such times. If conditions are very serious and farmers are very badly affected, purchase of new equipment, renovations to buildings, and erection of new buildings are suspended. Since poultry houses are empty, heating and cooling do not take place. Not only does the farmer lose money but so do the integrators, banking institutions, and all allied industry businesses as well as utility companies. Sometimes, such conditions lead to loss of farming jobs as well, which affects the whole community. A farmer may practice diligent biosecurity measures on the farm, but if the utility person coming to read the meter ignores good practices, he or she can track in any number of biological agents and in effect negate what the farmer is trying to do.



## What needs to be in a good biosecurity program?

The first thing to do is to identify sources/reservoirs and vectors of potential infectious disease agents and then prevent or restrict their access to the farm and flocks. In addition, there should be everyday implementation of good farming practices like providing adequate heating, cooling, and ventilation; offering good-quality feed and water; using proper medication (when needed); vaccinating for specific diseases; rapidly removing dead birds; composting or otherwise efficiently disposing of dead birds; composting or deep stacking manure and litter; and providing an overall stress-free environment.

## What is a source or reservoir?

A source or reservoir refers to animals, birds, feed, and/or water that naturally carry the specific agent and are capable of passing it on to other living things (in this case, commercial poultry) that can then catch the disease. For poultry diseases, these sources tend to be carrier birds recovering from a disease, other avian species, pets like cats and dogs, rodents, insects, backyard flocks, game birds, exotic birds, wildlife (especially wild birds), and waterfowl. Feed and water also may occasionally carry infectious agents. Live bird markets tend to be a significant source of certain diseases like avian influenza and laryngotracheitis.

## What is a vector?

A vector may be animate (living), or inanimate (nonliving). It is capable of harboring an infectious biological agent that when moved or carried around is capable of disseminating and spreading the biological agent. Vectors can be people, fomites (clothing, boots), pets, rodents, insects, wild birds, vehicles, farm and utility company equipment (crates, egg flats, inseminating equipment, hauling equipment), and so forth.

By far the most important vector in spreading poultry diseases is people. Everyone involved in some way with the industry (Extension personnel, catching or hauling crews, utility crews, veterinarians, service personnel, feed and other delivery personnel, other producers, etc.) have plenty of routine access to poultry houses and flocks simply because they visit farms and frequent stores and meeting places used by other poultry personnel. If all such personnel adhere to strict biosecurity measures, a farm biosecurity program has an excellent chance of being effective.

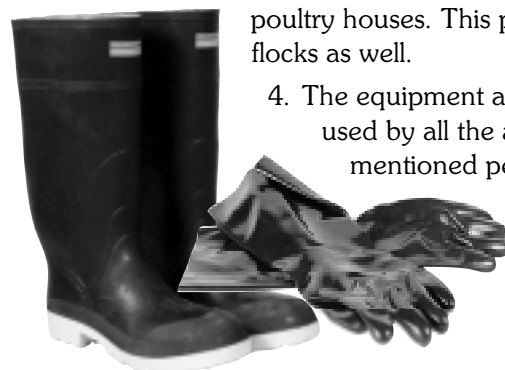
## What should go into a biosecurity program?

A good biosecurity program does not entail isolation from neighboring farmers or the general community (this only happens in a disease outbreak when a particular farm is quarantined). A good biosecurity program uses good farming and management practices primarily to keep out diseases and to contain them if they should get in. The integrator, Extension Service, and state department of agriculture personnel should inform producers and all people who routinely visit poultry farms how infectious agents are disseminated and their role in working together to prevent this. A biosecurity program works only when everyone contributes to it.

## Components of a practical biosecurity program

### *Prevent entry of contagious diseases onto the farm premises*

1. Construct poultry houses to prevent the entry of rodents, other vermin, wild birds, and, to the extent that it is possible, flies and insects. Any spilled feed should be removed at once, and baits and traps should be routinely placed both in and outside the poultry houses. Insects may also be controlled with known litter treatments or an integrated pest management program.
2. Construct buildings so that they are easily cleaned and can be effectively disinfected when needed.
3. Limit the entry of nonessential visitors. Make sure that those involved in the day-to-day activities of the farm (service personnel, delivery personnel, utility personnel, veterinarians, state health personnel) have appropriate coveralls, boot covers, gloves, and masks. Preferably, their vehicles should be disinfected before and right after leaving the premises, and they should be parked as far away as possible from the farm buildings. Disposable garments should be left on farms for proper removal. Farm neighbors should also be encouraged to wear appropriate disposable clothing when helping in poultry houses. This protects their flocks as well.



4. The equipment and supplies used by all the above-mentioned personnel should be cleaned and disinfected. It is also a good idea not to get in the





habit of borrowing equipment and supplies from other farms.

5. A visitor log-in system is a good idea because it lets a farmer know where visitors are coming from. If there is a problem, someone's footsteps may be retraced to find the source.

6. All commercial poultry producers should avoid contact with wild birds, waterfowl, backyard flocks, game birds, ratites, and live bird markets.
7. Make sure that all birds are obtained from disease-free stock (this will usually be the responsibility of the integrator). If possible, have an all-in, all-out system. Where this is not possible, segregate new and young birds from older ones and make sure to visit the older birds last each day.
8. Feed and water can bring in infectious agents. Make sure you have good-quality feed and water. Feed is usually supplied by the integrator from its own feedmills. Water should be from a reliable source, should be potable, and should be chlorinated if needed.

#### ***Practice routine good farm management practices to keep diseases at bay***

1. Keep all household pets away from poultry houses. Dogs and cats are known to carry bacteria like *Salmonella* and *Pasteurella* species, which are infectious for poultry.
2. Make sure you use good-quality litter and crust out after each flock. Add fresh litter before new birds come in. In the event of the outbreak of a disease, clean out houses completely and thoroughly disinfect them before stocking with new birds. Remember also under such circumstances to clean and disinfect all equipment. For the appropriate cleaners and disinfectants, consult with the company veterinarian and your service person.
3. Routinely clean all equipment, including feeders and waterers.
4. Keep a close lookout for abnormal signs and symptoms among the flock and report them at once to the company veterinarian and service person. By the time such signs and symptoms occur, an infectious agent is already established in the flock so it is necessary to confirm this as soon as possible.

5. Remove all diseased and dead birds promptly so that they do not infect the other birds. Dispose of them in a humane but effective manner that will not allow the further spread of the disease.
6. Litter and manure should be removed when necessary and stored in appropriate sheds and either deep-stacked or composted (especially when there has been a disease outbreak) in order to kill pathogens before being spread on farmland or moved off the farm.
7. Continuously trap and bait inside and outside poultry houses for rodents and other vermin. Use litter treatments and an integrated pest management program to contain insects and beetles.
8. On a daily and normal basis, wear appropriate clothing and check on younger birds first.
9. Impress on all visitors, both personal (family members and other farm friends) and workers about their role in preventing the entry and dissemination of disease. Enforce their participation because this is the only way to ensure the success of a biosecurity program.

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