

On-Farm Biosecurity: Traffic Control and Sanitation

VME-6

Veterinary Preventive Medicine

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In the context of livestock production, biosecurity refers to those measures taken to keep disease agents out of populations, herds or groups of animals where they do not already exist. Biosecurity measures are implemented on national, state and herd levels. Currently, there is heightened awareness of national biosecurity as the United States attempts to keep swine and avian influenza as well as foot-and-mouth disease (FMD) out of its animal population.

In addition to national concerns, individual states take measures to prevent the entry or reintroduction of livestock diseases they have been able to prevent or eradicate from their herds by setting requirements for arriving animals. Examples of diseases that are of particular concern to states include brucellosis, tuberculosis and pseudorabies.

Herd-level biosecurity usually rests with the herd owner or management team; they try to exclude any disease that is not already present in the herd or limit the spread of disease within the herd. Examples might include *Streptococcusagalactiae* mastitis, bovine viral diarrhea, bovine progressive pneumonia and swine dysentery. To be successful, biosecurity plans must address how the group of animals will be isolated away from other groups, how traffic (movement of people, animals and equipment) will be regulated, and how cleaning and disinfection procedures will be used to reduce pathogen levels.

What Are the Greatest Risks for Disease Introduction?

Although infectious disease can be introduced to a farm in several ways, bringing new animals or animals that have been commingled with, or exposed to, other animals usually presents the greatest risk. New herd and flock sires, or replacement females, are often the way that new genetics are added to the herd. This seemingly innocent process is a very common way of introducing new disease-causing organisms. Producers should attempt to purchase animals from sources with known health status whenever possible and an established Veterinary-Client-Patient-Relationship (VCPR). In addition, they should plan to:

- Isolate for at least two weeks, but preferably a month, all new arrivals or animals returning to the herd from situations where they were possibly exposed to other animals such as at fairs and shows. Isolation should be in a facility completely separate from the home animals. Outerwear (boots and coveralls) worn when tending to the quarantined animals should not be worn while caring for other animals. If complete isolation is impossible, use a separate pen or pasture that does not allow nose-to-nose contact or sharing of feed and water supplies. While the new animals are isolated, testing should be accomplished for diseases of particular concern; negative test results should be received before the new animals are mixed with the resident herd.
- Work with your veterinarian to develop a sound health program and protocols that include parasite control and vaccination for the diseases most likely to be encountered in your operation or management program.
- Isolate animals showing signs of disease to minimize exposure of the apparently healthy ones.

Contact your veterinarian so that appropriate diagnostic tests and treatment can be initiated.

What About People Who Visit the Farm?

Some operations, such as large poultry and swine farms, have well-developed plans for biosecurity and control of the risk that people present. In an emergency, such as the presence of swine or avian influenza or FMD in the United States, even these units' plans may need to be tightened with very strict control of human access to the farm. In more normal times, consideration of relative risks allows development of practical approaches to visitors to the farm.

Low-Risk Visitors

Visitors from urban areas, or others who have no livestock contact, present very little risk of introducing disease to the farm. Some precautions might include:

- Ask visitors to wear freshly laundered outerwear and clean footwear. You should provide them with disposable plastic boots (or clean rubber boots that can be disinfected) and coveralls as an added precaution. This provides your herd additional protection, but also helps prevent visitors from contaminating their clothing with germs from your farm.
- Do not rely too heavily on disinfectant-filled boot baths. Research has shown them to be unreliable methods of routine disinfection unless boots are thoroughly scrubbed before immersion and adequate contact time in the disinfectant is allowed—usually at least 5 minutes.
- Do not allow visitors to enter pens, walk through feed alleys or contact animals if possible.
- Do not allow visitors to bring food articles with them on the farm.
- When visitors leave, provide a plastic bag for disposable boots or trash, and ask that they wash their hands (and boots, if worn) before leaving the facility. Identify a place on the farm to wash hands and footwear (have available water, disinfectant, at least a brush, and disposable paper towel). According to the Center for Disease Control, the following is recommended: wash your hands with soap and warm water for at least 30 seconds to 1 minute. However, when soap and water are not available, alcohol-based disposable hand wipes or gel sanitizers may be used.

Moderate-Risk Visitors

People who routinely visit farms, but who have little or no contact with animals, present only a moderate risk of introducing disease. Salesmen, feed and fuel delivery personnel, and mechanics are examples of this group. They should be expected to observe the same precautions as stated earlier and in addition:

- They should wear clean coveralls and boots (disposable plastic or clean, disinfected reusable boots) if there is any contact with feed, animals, soil or manure.
- Any sampling equipment should be cleaned and disinfected between uses.
- Dirty boots should be cleaned and disinfected, and coveralls should be removed and placed in a clean plastic bag or container before re-entering the vehicle.

High-Risk Visitors

High-risk visitors to the farm include inseminators, processing crews, veterinarians, livestock haulers and livestock-owning neighbors. These people typically have close contact with animals and their bodily discharges. In addition to the earlier precautions, other recommendations might include:

- Vehicles should be clean and free of visible manure on the tires and wheel wells. In an emergency disease situation, such as the presence of FMD in the United States, restrictions to access to the farm should be in place, and disinfection of vehicles should be considered. If an outbreak occurs in Ohio, these restrictions will be mandated. Vehicle interiors should be clean and easily cleanable. Livestock trucks and trailers should be clean, and preferably disinfected, before arrival on the farm.
- Visitors should arrive with clean clothing, boots and equipment at every farm visit. Equipment and instruments that have direct animal contact (dehorners, castration equipment, halters, etc.) should be cleaned and disinfected (or sterilized) after use and maintained in such a way that they do not become re-contaminated.
- Disposable sleeves and gloves and other disposable, or disinfectable, clothing should be worn whenever there is direct contact with bodily discharges or animal tissues.
- Before leaving the farm, dirty equipment and footwear must be cleaned, washed and disinfected with an appropriate disinfectant. Soiled coveralls should be removed before re-entering the vehicle. Potentially contaminated hands and forearms should be washed with soap and water or a suitable cleanser.
- Farm employees who have livestock at their own home should be required to report to work personally clean and in clean clothes that have not been exposed to their livestock. They could provide their own clean coveralls and disinfected boots, or it may be easier to supply employees with outerwear and boots that are left at the farm when the employee returns home.

What About My Neighbors Who Drop By or Come to Help?

Most of us don't want to offend a neighbor or a friend. Consider having a few extra pairs of coveralls and boots to loan them while they are there. If you explain to them that this is a measure to protect the health of their herd or flock as well as your own, they are not likely to take offense.

How Do I Maintain Clean Outer Clothing During the Winter?

For some jobs, it may be helpful to purchase rubberized over garments that can be easily cleaned and disinfected and which don't allow fluids to soak through. Some types of coveralls, such as nylon, are less permeable than cotton and may be more easily cleaned than cotton or other fabrics. It is difficult to frequently clean many types of coats and jackets. It is possible to purchase outer layer systems that have a detachable outer nylon shell, sometimes waterproof, with inner layers for warmth and comfort. Inexpensive nylon windbreakers can also be purchased for use over top of regular coats. These outer layers can be more frequently changed and laundered, and having several can allow you to keep clean most of the time.

What About Wildlife?

Fortunately, most diseases that livestock producers are concerned about are relatively species specific. Likewise, the presence of wild animals in the area does not constitute a certain risk to livestock. However, some diseases such as rabies, leptospirosis and salmonellosis can be carried and spread by some species of wildlife and vermin such as rats and mice. Although it is nearly impossible to completely prevent the possible contact of wildlife with our livestock, we can make barnyards and surroundings unattractive to many species. Keep grain spills or other potential sources of food cleaned up and unavailable to wildlife. Clean up old board piles or woodpiles and inspect buildings for possible hiding or denning areas. Inspect the haymow for evidence that cats, raccoons or other animals are using the hay or the straw for denning areas or places to defecate. For dairy, poultry and swine operations, it is very important to have a pest control program in place, at least, for insects (e.g., flies), rodents and birds (e.g., starlings). Please contact the USDA APHIS Wildlife Services regional or state office near you for

information on current integrated pest management programs.

Can Farm Equipment Present a Risk for Disease Entry?

Farm equipment that has come into contact with livestock or their bodily discharges can be a source of infections. Manure-hauling equipment should not be shared between farms without thorough cleaning and disinfection. Likewise, on-farm use of such things as front-end buckets and skid-steer loaders for both manure removal and feed delivery can spread diseases such as salmonella, leptospirosis, cryptosporidiosis and Johne's disease, to name a few. Cleaning and disinfection of this equipment should be routine. Vehicle tires and undercarriages can harbor disease-causing germs, especially if they have come into direct contact with animal discharges. Many germs do not survive long outside the animal, but some do, and these sources can be critical for highly transmissible diseases such as FMD.

Practical biosecurity for day-to-day situations can be achieved without the total restriction of entry to the farm that might be appropriate in swine and avian influenza outbreaks or an FMD emergency situation. Biosecurity requires a plan that you adhere to and a regular review of your plan to uncover deficiencies and adapt to new knowledge. It is most successful if a majority of producers adopt a workable plan. Entry of exposed or carrier animals, contaminated feedstuffs and contaminated equipment represent the greatest threats for disease entry. With planning, these risks can be limited.

This fact sheet is a revision of the original written in 2001 by Dr. Gary L. Bowman, D.V.M., Extension Veterinarian, Swine, and Dr. William P. Shulaw, D.V.M., Extension Veterinarian, Cattle and Sheep; Department of Preventive Medicine, College of Veterinary Medicine.

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