



## Biosecurity Guide for Livestock Farm Visits

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**B**iosecurity can be defined as those practices designed to prevent the introduction of a harmful agent into a defined setting. In livestock operations, this means preventing harmful agents such as viruses, bacteria, parasites or toxins from coming in contact with livestock.



Highly visible livestock disease outbreaks, such as foot-and-mouth disease in the United Kingdom, have focused our attention on biosecurity. However, it is important to realize that many diseases commonly found in the United States can be spread from farm to farm and result in significant animal sickness, death and economic losses.

Biosecurity protocols should be part of every farm's management plan and should include protocols for farm visitors. Visitors may include neighbors and friends making a casual visit or veterinarians, feed sales people or equipment dealers making a professional visit. The common thread among visitors is that they may unknowingly bring harmful agents onto an operation. The risk is increased with visitors who regularly go from farm to farm as part of their profession.

Agriprofessionals whose jobs take them from farm to farm must be conscientious about biosecurity and develop protocols that significantly reduce their risk of spreading disease. This is important not only for the health of the livestock but also as a statement of their professionalism, and it reflects their understanding of the importance of diseases in the economics of the livestock industry.

The following guidelines can be used when visiting livestock farms.

### Planning Farm Visits

No farm visit should be made without careful planning. Always get permission to visit a livestock producer. Make an appointment so that both you and the producer can make the best use of time. Before visiting, ask where you can park to reduce contamination of your vehicle with organic material such as mud and manure. Try to park in an area away from livestock areas. Always remember that vehicles are as much a risk for spreading disease pathogens as people are. Ask about any specific biosecurity protocols the producer has implemented that you should follow. For instance, some swine producers require that visitors have not been on another swine operation during the past 24 hours.

When deciding what biosecurity procedures to employ during farm visits, think about your visit purpose. Procedures needed for visiting to review production records will be much different from those needed if your plans are to catch and handle multiple animals.

### Think "Clean to Dirty"

Consider what farm visits are to be made on a daily basis. If possible, schedule only one farm visit per day. If multiple visits must be made, schedule those that may require close livestock contact last. Arrange the order of farm visits to minimize the risk of disease spread from one farm to another. For instance, if a visit is to be scheduled to a farm where a significant health issue is suspected, visit that farm last or make no other visits that day.

## Biosecurity Supplies

Before visiting a farm, make sure you have the proper supplies to maintain biosecurity. Designate one part of your vehicle clean (back seat) and one part dirty (trunk). Supplies you should carry include:

- Coveralls.
- Soap.
- Rubber or plastic disposable boots.
- Bucket or large pan.
- Disinfectant.
- Disposable gloves.
- Boot brush.
- Water supply.
- Hand brush.
- Trash bag.

## Arriving at the Farm

Always arrive at a farm in a vehicle that is not contaminated with mud and manure from previous farm visits. Park in an area suggested by the producer that is clean and separated from animals. Concrete or blacktop areas are ideal and will facilitate later clean up.

Clean clothes and footwear are mandatory. Clean rubber boots should be worn. They should be free of any organic material. Disinfecting them before entering animal housing areas is recommended. In addition, if the producer has a footbath, use it before entering designated areas! An alternative to rubber boots is disposable plastic boots. Try to obtain boots rated as heavy duty to reduce the chance they will tear in harsh farm environments. Take care when wearing plastic boots as they can significantly reduce traction in wet and icy conditions.

Any materials carried onto the farm, such as paper, computers, sampling equipment, etc., should be clean and free of organic material. Any equipment to be used on animals (e.g., tattoo pliers) or feed (forage core sampler) should be disinfected both before and after use.



During the visit, minimize animal contact unless it is absolutely necessary. When possible, avoid excess contact with feces and other organic material. Avoid walking through feedstuffs that will be fed to animals. If observing or working with multiple groups of animals on the same farm, start with young animals and move on to adults. Start your visit with healthy animals. Sick animals should always be examined last.

## After the Visit

After the visit is finished, rubber boots should be thoroughly cleaned and disinfected. All organic material needs to be removed before disinfection. Coveralls and boots should be placed in a trash bag and put in the dirty area of the vehicle. Disposable boots and other garbage should be placed in a separate bag for disposal or left on the farm, if that's agreeable with the producer.

Wash hands and other contaminated skin surfaces (face) with soap and a mild disinfectant.

## Disinfectants

An ideal disinfectant is one that is broad spectrum (works against viruses, bacteria, bacterial spores, protozoa and fungi), works in any environment, and is non-toxic, non-irritating, non-corrosive and relatively inexpensive. Unfortunately, no disinfectant is ideal. Criteria to use when selecting disinfectants include the following:

- Effectiveness against potential pathogens.
- Toxicity to humans.
- Toxicity to animals.
- Corrosiveness.
- Environment to be used in.
- Expense.

The following disinfectants may be considered for use in maintaining biosecurity during farm visits.

### *Chlorhexadine*

Chlorhexadine disinfectants are relatively non-corrosive and non-irritating. They do maintain their effectiveness in the presence of some organic material but will precipitate out in hard water. While rela-

tively broad spectrum, chlorhexadine disinfectants are not very effective against some viruses, such as foot-and-mouth disease, and the bacteria that cause tuberculosis and John's disease. Examples of chlorhexadine disinfectants include Nolvasan(R) and Virosan(R).

#### **Hypochlorite**

Disinfectants containing hypochlorites are effective against a broad spectrum of organisms, including foot-and-mouth disease and bovine tuberculosis. Household bleach (e.g., Clorox(R)) contains 5.25 to 6% sodium hypochlorite and is readily available and relatively cheap. A 0.1% solution of sodium hypochlorite can be made by mixing 1 ounce (about 1/8 cup or 30 ml) of household bleach with 1 gallon of water. A mixture of 1 part hypochlorite and 9 parts water is effective against Mycobacterium organisms, including those causing bovine TB and John's disease. Hypochlorite disinfectants can be irritating, can damage clothing and are corrosive to equipment. They are quickly inactivated in the presence of organic material.



#### **Phenols**

Phenols are broad-spectrum disinfectants but they are not effective against non-enveloped viruses such as foot-and-mouth disease virus. The fact that phenols maintain their activity in the presence of organic material makes them useful in livestock operations. Although phenols are relatively non-toxic, prolonged skin exposure can be irritating. Examples of phenolic disinfectants include One-Stroke Environ(R) and Lysol(R).

#### **Oxidizing agents**

Oxidizing agents are peroxide-based and include the commonly used wound disinfectant hydrogen peroxide. These agents are broad spectrum and are generally effective against diseases such as foot-and-mouth disease and tuberculosis. They are inactivated in the presence of organic material. These agents are relatively safe in their diluted forms, but they may be irritating and can damage clothes in the concentrated forms. Examples of oxidizing disinfectants include Trivectant(R), Virkon-S(R) and OxySept 333(R).

#### **Iodine disinfectants**

Iodine-based disinfectants are broad spectrum in their activity. They are often formulated with soaps to form products such as surgical scrubs. They are inactivated by organic material, and although relatively safe, concentrated forms (tincture of iodine) can be irritating and can stain clothes. Example of iodine disinfectants include Betadyne(R) and Povidone(R).

#### **Quaternary ammonium**

Quaternary ammonium disinfectants, or "quats", contain ammonium. They are ineffective against non-enveloped viruses and are inactivated by organic material, hard water and soap. Examples include Roccal-D(R) and Zephiran(R).

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