

Creating a Healthy Herd: Biosecurity from the "Down and Dirty" Perspective

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Admit it. Biosecurity is one of those areas you try to address, but the nature of your business prevents you from doing anything really meaningful, right? I would suggest there are things we can do to improve that situation, and make meaningful reductions in the biosecurity risks we face.

We all understand the concept of biosecurity. It's all about limiting disease. That is accomplished in only three ways: keeping disease out in the first place, limiting its spread if it's already there, and killing it in the animal or the environment.

Another way to look at it is we need to separate three things: groups of animals themselves, the equipment we use with those different groups, and the people taking care of them. If we use a skid steer to clean out the sick pen and then go push up feed to the high production group with the same machine, it is fairly obvious we are going to be dealing with some interesting problems on the farm. The whole topic is beyond the scope of one short article, so let's start with the routine disinfection of equipment and facilities, and branch out from there in future articles.

The main point to take away from this is simple: **You cannot disinfect something that is still dirty.** That goes for the skid steer we used as an example, as well as calf hutches or basically any object. First, we need to remove **all** the dirt, manure and organic matter. **Then** we can disinfect.

To bring in a dirty calf hutch and spray it off with disinfectant is doing only two things, wasting employee time and wasting disinfectant. Not only does the dirt and manure physically protect the organisms we are trying to kill, but it also inactivates many of the common disinfectants we use. To do it right, we need to first wash the item with soap and water, removing all dirt and organic matter, and then disinfect.

The same goes for those walk-through boot dipping trays many of us have outside entryways and doors. After the tray has been used a few times, we might as well go stand in the manure pit. To get footwear clean and disinfected requires a brush, soap and water, some vigorous scrubbing and then disinfection. Wading through a couple of inches of filthy disinfectant solution? We're kidding ourselves.

Think about the footbaths we use for the herd. Why is it we mostly use the footbaths on the way OUT of the parlor, and try to clean off the feet a bit before they go out? It's the same reason. We need to disinfect a clean surface, and the solutions work better and last longer if the surface is not loaded with manure.

We also need to remember all disinfectants require some contact time to be effective. The amount of time needed to kill bacteria or viruses varies with the agent used, and can be anywhere from 30 seconds to ten minutes of contact time before rinsing of the agent. Always follow label directions when using any disinfectant, to include contact time and dilution instructions.

It is often acceptable to not rinse after disinfecting and to allow the disinfectant to dry on the object being treated, but always follow the directions on the product's label. Some will be too corrosive if not rinsed properly. We must also keep in mind chemicals kill microorganisms by a variety of toxic reactions, and some disinfectants are toxic to human and animal tissue as well.

As such, we need to ensure employees are trained to avoid occupational injuries and health problems, and to always follow label directions and consult MSDS (material safety data sheets) before using any product.

Some of the more common disinfectants are listed below. This is not intended as an exhaustive list, but shows the primary ones we currently use at Genex facilities around the country.

- a. **One-Stroke Environ™** - For use on buildings, pens, vehicles and equipment. This is one of the most effective for use on inanimate objects, but has some serious toxicity issues and requires much employee care in its use. Not approved for use in milking parlors and associated areas.
- b. **Virkon™** - For use on buildings, equipment and humans, but must not be used after the pink indicator fades (about a week after mixing). This is a good agent to use in close human or animal contact, as it is non-irritating to the skin and eyes (after it is mixed), and does not have a toxic vapor phase.
- c. **Chlorhexidine products** - For use on basically everything, including animal tissue. Very non-irritating, but will not kill certain bacteria and viruses.
- d. **Quaternary ammonium products** - For use on most surfaces, but should not be used extensively on animals themselves. It is a good general purpose disinfectant for use on precleaned surfaces.
- e. **Sodium hypochlorite (bleach)** is very effective against many organisms, but care must be observed as the material can be corrosive to many materials and tissues. Used over time, it is very corrosive to stainless steel.

As a final note, care must be taken that the site chosen for disinfection is a good one. We must be sure material washed from equipment is not left in a position to provide a source for microorganism spread, and that chemicals used in the process do not contaminate our facilities or the environment.

3 Steps to Properly Disinfecting Surfaces

1. Remove loose dirt and organic matter



2. Wash surface thoroughly with soap and water

3. Disinfect and rinse according to product label

Author Bio: Dr. Roger Weigle graduated from Kansas State College of Veterinary Medicine and gained industry experience at the Kansas Artificial Breeding Service Unit. After 25 years of private veterinary practice in northeastern Wisconsin, Dr. Weigle now leads the cooperative's animal health programs and develops educational programs for Genex staff, members and customers