

Keep Disease An Isolated Incident

Taking time to isolate new animals before introducing them to the herd can help minimize the spread of disease.

by Kindra Gordon

Sale season results in many cattle going to new ranch environments. But along with the new genetics buyers are purchasing, there is also a possibility these animals could bring disease risks onto their new ranch destinations.

That's why biosecurity is a necessary part of livestock management, says Russ Daly, South Dakota State University Extension veterinarian. Daly defines biosecurity as the steps producers can take to decrease the risk of new diseases entering their farm or ranch. He is a huge advocate of isolating new animals for 30 days before commingling them with the existing herd.

Daly points out that reproductive diseases within cattle herds can be economically devastating because they are difficult to diagnose and may cause infertility, abortions and overall reduced animal performance. Thus, Daly says it's best to be ahead of the disease by using biosecurity.

"Keeping problems out pays," he says.

A common misconception by many is that biosecurity means preparing for agroterrorism-type acts against their cattle operations, but Daly emphasizes that is something entirely different.

"Biosecurity addresses the things we deal with on a day-to-day basis in the herd that affect profitability," he says. Many of the diseases that biosecurity programs address are infectious diseases that affect reproduction — such as bovine viral diarrhea (BVD), infectious bovine rhinotracheitis (IBR), leptospirosis (lepto), vibriosis (vibrio), trichomoniasis (trich) and neosporosis.

Daly advocates that biosecurity management steps are the key to reducing the likelihood of having these diseases enter a herd.

Understanding disease

Daly shares that three factors — the agent, the host and the environment — influence the expression of disease, and all interact. "Disease results from an imbalance among the three factors," Daly says.

For instance, cool, moist conditions may make it easier for an agent to survive and cause greater expression of a disease. Likewise, packing several animals into a small space can surround them with more infectious agents.

Daly says this is where management comes in. "People can influence these factors," he



says. "Many times the interactions are in our control through management."

However, he emphasizes that when putting together a disease management control program — or biosecurity plan — a common mistake is to focus on only one of the three components. For example, producers may treat the agent, but ignore the environment.

To be effective, Daly says, "managers need to consider all three components (agent, host and environment) when forming control measures."

1. Start by doing your homework. Because most infectious diseases are introduced to the farm or ranch by new arrivals to the herd, Daly recommends that producers research the source of the animals they intend to purchase.

Find out what herd health and vaccination programs are being used in the herd of origin, and what, if any, herd disease-testing protocols are being used.

Daly says reputable producers will be straightforward and open about the health status of their livestock. Some may even provide the name of their veterinarian so that the veterinarian of the receiving herd can communicate with them regarding herd health and proper methods of introducing the new animals.

A sample replacement heifer biosecurity program

If you are purchasing replacement females and bringing them onto your farm or ranch, South Dakota State University's Russ Daly suggests following this biosecurity protocol:

- ▶ Isolate heifers from the existing herd for 30-60 days.
- ▶ Test for persistent infection (PI) with bovine viral diarrhea (BVD) on arrival.

Daly estimates the cost is about \$4 per head.

- ▶ Consider testing for Johne's disease and/or neosporosis, depending on your herd health program.
- ▶ Give long-acting tetracycline on arrival to clear animals for *Leptospira hardjo bovis*.
- ▶ Vaccinate to match the source herd prebreeding vaccination protocol.

Daly adds that high pregnancy and calving rates can also be indicators of minimal reproductive disease problems in a source herd.

2. Plan to isolate new animals. Once you've purchased any new animals and brought them to your farm or ranch, Daly strongly advises they be isolated and kept away from the herd for at least 30 days. He says 60 days is even better.

This includes bulls, replacement females, bred heifers and mature cows — any new animal being brought onto the property. If you bring in foster calves, you should isolate the pair for that 30-day window.

Show cattle taken to different events should also be kept separate for a minimum of 30 days before being commingled with the herd.

Daly says the purpose of isolation is to allow new animals an opportunity to recover from any transient illnesses [such as IBR, bovine respiratory syncytial virus (BRSV), pinkeye, etc.] that they may be incubating on arrival. It prevents them from shedding the infectious agents to animals in the existing herd. And, it also allows the animals to acclimate to their new environment.

For isolation to be effective, it requires physical separation (no nose-to-nose contact) from existing herdmates. This means no fenceline contact or shared waterers.

If possible, animals should even be isolated so they have separate runoff and drainage patterns. Daly points out that this is advisable because pathogens like BVD, salmonella and leptospirosis can be transmitted through manure or urine.

Equipment, including tractors and trucks, should not be shared between the isolates and existing herd. For instance, if a tractor is used to move manure among the isolates, it should not be used around the herd — or it should be cleaned and disinfected first. Likewise, equipment such as stomach tubes or oral bolus guns should not be shared between the two groups, and even boots and coveralls used by individuals entering the lots should be changed between groups.

A separate farm site is the best for true "isolation," Daly says.

3. Test and vaccinate new arrivals.

During the isolation period, new animals should be tested for certain diseases of concern, such as persistent infection (PI) with BVD, trichomoniasis in bulls, and Johne's — depending on the producer's goals.

But, Daly emphasizes that testing of incoming animals should not be done without reason. Likewise, if animals that test positive aren't going to be kept out of the

Be aware of animal-to-human disease risks

Zoonotic diseases are those that can be transmitted from animals to people. We've heard about several of these in the headlines — such as avian influenza, West Nile Virus, Severe Acute Respiratory Syndrome (SARS) and anthrax.

Other common zoonotic pathogens include *E. coli*, salmonella, rabies, cryptosporidium, roundworms and ringworm.

South Dakota State University's Russ Daly says people who work around livestock need to take precautions so they don't get sick from some of these pathogens. And, he emphasizes, when city kids or grandkids come to visit the farm (or pet the animals at a livestock show or

petting zoo), their immune systems are usually not prepared for those particular pathogens, so special precautions should be taken when they are around livestock.

Steps you can take to decrease exposure to zoonotic disease risks include:

- ▶ When possible, stay away from sick calves, stressed animals (calving cows) and manure contamination.
- ▶ Keep barn clothes and boots out of the house and away from children.
- ▶ Disinfect barn interiors and animal equipment.
- ▶ Be diligent about washing hands after being around livestock.

herd, Daly says there's no sense in putting the money into testing.

Revaccination of the new animals should also be done during the isolation period to match the vaccination status of the resident herd. But keep in mind, revaccination should occur after any disease testing you want to do, otherwise the animals may give a false positive for the diseases they were vaccinated against.

Also, because certain diseases, like leptospirosis and anaplasmosis, are hard to test for, Daly suggests giving isolated animals antibiotics to clear them of these diseases. Again he cautions that blanket antibiotic treatment without an underlying reason is likely unnecessary for healthy incoming cattle. Producers should work with their veterinarian when considering these treatments.

Daly offers this biosecurity tip for the existing herd: He stresses that reproductive vaccines should be given 30 days prior to breeding to get the peak immune response.

"A month before breeding is the best time to give vaccinations so cows have the

best disease protection at ovulation and fertilization and when they are susceptible to BVD PI infections," he explains.

4. Monitor environmental factors.

Elements often overlooked in disease control are the environmental factors that can aid disease transmission. Daly says cleaning and disinfecting equipment, eliminating standing water, and controlling rodents and canines can all be helpful in minimizing transmission of diseases like leptospirosis, salmonella, neosporosis and BVD.

Taking a cue from the swine industry, some feedlots and backgrounders are also looking at "all-in, all-out" management schemes. In these situations, a group of animals are kept together and no new animals are added to the group.

Daly says research is showing this type of system minimizes disease risks and stress to the animals.

There is no "one size fits all" biosecurity program, he concludes. It really comes down to working with your veterinarian to identify a protocol that fits your operation.

