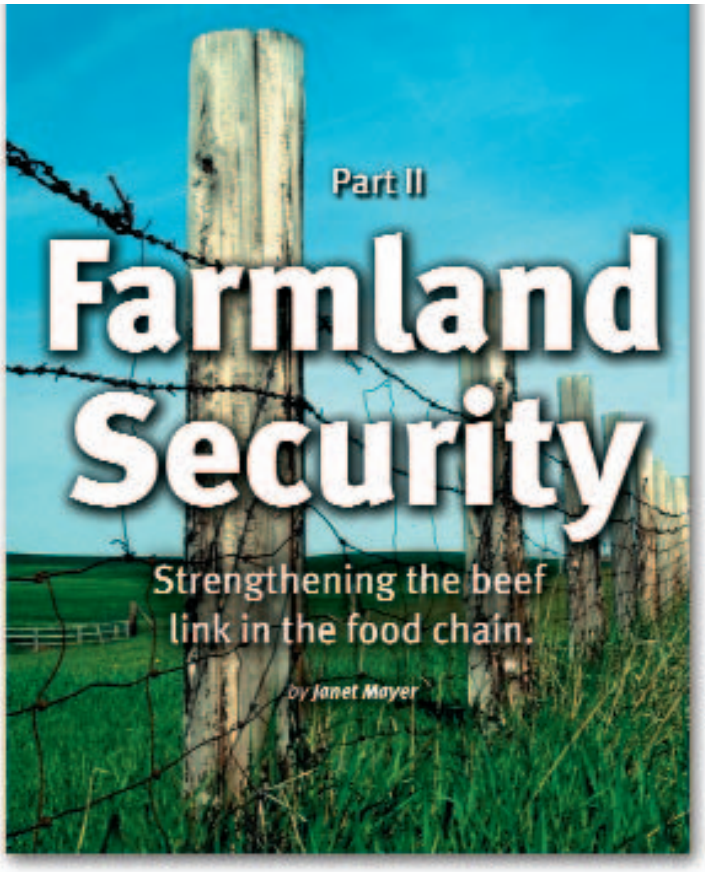

Many believe the beef industry is one of the weakest links in the U.S. food chain and, therefore, a perfect target for bioterrorism. Another concern is a swift blow by Mother Nature, introducing an outbreak of foot-and-mouth disease (FMD) or some other highly contagious disease. Whether introduced by terrorists or Mother Nature, scientists say potentially devastating plant and animal diseases will almost certainly continue to threaten agriculture and the livestock industry in coming years, underscoring the urgent need for improved contingency plans and biosecurity measures at all levels of operation.

How is the beef industry handling these issues? One Texas feedlot manager recently acknowledged that his operation is concerned about both accidental and/or intentional spread of disease, but that is really all it is — a concern. It's one that he feels he can't really do much about.

"Biosecurity in an open environment is a wide-open issue, and we may be a wide-open target, but it's not something solid that has feasible steps toward a specific goal," he says.

Steps to take

Are there steps beef producers could and should take to establish biosecurity in their operations?

The Virginia Cooperative Extension Service advises producers that there is a real need for farm security, and managers should treat the issues seriously by drawing up a contingency plan and implementing farm-level biosecurity measures. The Extension publication dealing with the issues notes that while developing and maintaining biosecurity is difficult, it is the cheapest, most effective means of disease control available, and no disease prevention program will work without it. The primary objective is to adopt basic procedures and discipline to reduce or prevent the spread and movement of infectious disease that has been either accidentally or intentionally transmitted into an operation.

What measures should be taken? Publications from the Iowa State University Center for Food Security and Public Health (CFSPH), American Farm Bureau Federation (AFBF), Nebraska Cooperative Extension, West Virginia University Extension and University of Minnesota Extension offer the following advice on setting up biosecurity for a livestock operation.

As the first step in setting up a biosecurity plan, most experts advise the development of a resource group made up of people with the specific knowledge of controlling biologic organisms. This group could include people important to your operation, such as managers, herd veterinarians, Extension specialists, suppliers, nutritionists and any others who may have specific knowledge of biosecurity.

Since the introduction of new cattle and traffic poses the greatest risks to cattle health, isolation, traffic control and sanitation are the three key priorities in a good biosecurity plan. When effectively managed, these components can meet the principal biosecurity objective of preventing or minimizing cross-contamination of body fluids (feces, urine, saliva and mucous) between animals, from animals to feed, and from animals through equipment or intermediary agents.

Isolating incidents

Isolation prevents contact between animals within a controlled environment. Minimizing commingling and movement of cattle is the most important step in disease control, especially with the purchase of new animals or those returning from fairs or shows. Isolation should last from at least two weeks to a month. Have new animals tested before mixing them with your existing herd, and isolate animals showing any signs of disease.

Sick cattle should always be isolated and returned to their original group when recovered. Long-acting therapies have improved the ability to minimize movement of infectious organisms between groups, making the separation of cattle by age and/or production groups an important biosecurity action. Facilities should always be cleaned and disinfected between groups. Work with your veterinarian to develop a health program that includes parasite control and vaccination for disease, and seek advice about specific isolation management procedures and how they can be applied to control targeted diseases.

Controlling risk

Traffic control within the operation should be designed to stop or minimize contamination of cattle, feed, feed-handling equipment and equipment used on cattle. This includes not only vehicles and visitors, but other people with business at the operation, as well as animals such as cats, dogs, horses, rodents, birds, insects and wildlife. Without good traffic control, disease can sneak in on anything from coveralls to tractor tires. People have the potential to spread contaminated material directly by boots, shoes, hands and clothing.

Disease can be spread from farm to farm by shared hoof trimmers, on-farm machinery and other equipment passing between farms, as well as through livestock haulers, veterinarians and neighbors who own livestock.

For visitors, a good rule of thumb is to limit access to barns and lots by positioning warning signs asking visitors to keep out. Include instructions and a phone number to call instead of entering the operation. If visitors are granted access, be sure they either wear clean boots and overalls or disposable clothing. Keep a record of who visits the operation and the dates.

To minimize contact from livestock haulers or buyers picking up calves, trucks should be washed and disinfected prior to entering the operation. A good alternative method to minimize contact is to locate a set of holding pens away from the main housing areas and use them as a transfer station to keep outside vehicles off the operation.

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Sanitation solutions

Sanitation addresses the disinfection of materials, people and equipment entering the operation and the cleanliness of people and equipment on the operation. Beware of using instruments and equipment on healthy animals following their use on sick or infected animals. All equipment that handles feed or is introduced into the mouths of cattle should be cleaned and disinfected before use.

Avoid using common syringes and needles for vaccination, blood testing or administering animal health products. Be aware when working with sick animals to move only from healthy to sick animals, and not vice versa.

Rodents and other wildlife are capable of carrying diseases within a herd. Rodents can spread or accelerate the spread of established diseases from contaminated areas to uncontaminated areas via their droppings, feet, fur, urine, saliva or blood. Clean up, mow and seal openings in building.

Putting biosecurity to work

Ridgemead Farm, Erie, Pa. Biosecurity measures have been a part of Elizabeth Geer's operation since the early 1990s.

"A very contagious disease affecting horses was in our area at the time," she says. "Although we were basically a cattle breeding operation with about 80 Angus brood cows at the time, we also had Welsh ponies and horses on the place, and I wanted to make sure the disease stayed out."

Geer says she consulted a local veterinarian to find out what preventive measures she could take to keep the disease off the farm. Following his advice, she purchased the initial supplies for a footbath and set rules for all farm visitors.

"My neighbors and visitors to the farm thought I was being overcautious, and others just thought I was plain crazy," she says with a laugh. "You can't believe the looks I would get when I told people they had to scrub their boots and the bottoms of their dungarees before entering the barn. I also made sure that anyone coming on the place with a vehicle had to clean it before they could drive on the property, especially when it was trucks coming from other farms. Although most of the horse farms in the area had the disease to some extent, we stayed free of it.

"Since that time, we have put the footbath and rules back into service a few times when we thought there was a need," she says. "As cattle producers, we all should heed the warnings of bioterrorism and be very cautious, because if a disease like FMD gets into our herds, the result could be a tremendous blow."

Prather Ranch, Fall River Mills, Calif. At Prather Ranch, biosecurity measures are used by keeping a "closed herd" of 1,550 English crossbred cows. To maintain its isolation and improve the genetic potential, the ranch's breeding program mandates that all cows be bred by artificial insemination (AI), using frozen semen from superior Angus and Hereford bulls.

Isolation, traffic control and sanitation are the three key priorities in a good biosecurity plan.

According to Mary Rickert, one of the ranch's general managers, the ranch has been referred to as the largest Food and Drug Administration (FDA)-recognized closed herd in the country.

"No new animals, including bulls, have entered the herd for many years, preventing the possibility of new animals entering the herd and exposing our cattle to outside disease," she says. "We have found that by preventing exposure to animals from outside sources, we believe our cattle are healthier. To keep disease out of our herd, our vet even keeps a pair of boots that he refers to as his "Prather Ranch boots," and he only wears them when making calls to the ranch. We also have a dedicated cattle truck and equipment used exclusively for the herd."

Named 2005 Commercial Producer of the Year by the Beef Improvement Federation (BIF), the ranch supplies bovine raw materials to various pharmaceutical companies. Rickert says the companies are extremely specific about standard operating procedures (SOPs), and certain protocols must be followed that warrant regular audits.

In 1990, the ranch and cattle were audited and deemed "clean" of bovine spongiform encephalopathy (BSE) by the pharmaceutical companies and the International Organization for Standardization (ISO). SOPs were set in place to actively manage and to ensure the herd and operation had biological security.

Since the operation also does direct marketing of both natural and organic dry-aged beef in southern Oregon and northern California, a U.S. Department of Agriculture (USDA)-inspected harvesting and meat processing facility is maintained on site. Rickert says anyone visiting the packing plant is required to use a specific disinfectant to spray their boots, and if they go into the processing facility or onto the kill floor, they must wear plastic booties.

Delaware Valley College, Doylestown, Pa. The college was the first agriculture institute of higher learning in the state to implement biosecurity measures on its campus. Since 2002 all students, faculty members and visitors to the campus have had to adhere to biosecurity restrictions.

"For 106 years, we had an open policy that allowed the general public access to any of the barns," says Jim Diamond, dean for agriculture and environmental sciences. "However, we felt we needed to tighten security up mainly because of the outbreak of FMD in Great Britain."

Although the school doesn't have a large number of animals, it does feel vulnerable because of its location within a corridor between the John F. Kennedy (JFK) International Airport and Philadelphia airports and its proximity to several shipping ports. "A Days" brings 50,000-60,000 people to campus, many of whom view the livestock and visit the barns. Humans exposed to FMD can carry it on their shoes, in dust on clothing, or even in a beard, nostrils or lungs.

"We felt we needed to shut down free access," Diamond says.

To let visitors know they are entering a restricted biosecurity area, warning signs are posted at all ag entrances to the college and the school's outlying farms. All trucks and cars going into ag facilities on campus are required to drive through a vehicle disinfectant pit. Faculty, students and workers are required to use a footbath at all barns each time they enter and to wash their hands before leaving. When planned tours are on campus, all visitors must wear plastic boots before entering the facilities.

"Even though we have lifted some of our restrictions, I firmly believe we are not out of the woods on this yet," Diamond says, adding that the swine and poultry industries are ahead of the cattle industry in this regard. "Last fall I visited a swine operation in Lancaster County that required us to shower and put on disposable coveralls and boots to be worn before touring the facility. On leaving, we did the routine in reverse and showered on our way out. I respected their approach to preventing disease and really think the remainder of the industry should be doing the same. My advice to other producers would be not to let your guard down. Our food supply is really vulnerable, and I believe it is not a question of if, but a question of when."