

## Preventing the Spread of Animal Diseases — Applications for Youth Livestock Shows

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Biosecurity at youth livestock shows is key to helping prevent spread of disease.

### What is Biosecurity?

Biosecurity includes the rules and procedures that prevent entry of new disease agents into a herd. A more “everyday” definition is a combination of attitude, routines, communications and common sense that is a necessity in livestock production to prevent the spread of disease. It’s also an example of the old saying “An ounce of prevention is worth a pound of cure.” The presence of disease causes animal suffering, reduces growth efficiency, creates added costs and labor and decreases profitability.

### Why is Biosecurity Important to an Exhibitor in Youth Livestock Shows?

Because a disease outbreak can be economically devastating, biosecurity is very important to livestock producers. Compared to the majority of livestock producers, most youth exhibitors are not as dependent on their animals for income; however, some exhibitors may have herds of animals besides their show animals, their family may depend on income from livestock, or they may live near farms with livestock. The most common way that new diseases will be introduced into a herd is from direct contact with other animals. Thus, the animals that a youth exhibitor takes to a show and then takes home again are potential sources of disease for their own, their family’s or neighboring families’ livestock herds.

A second reason to be aware of biosecurity and good sanitation practices is that some diseases, such as club lamb fungus and salmonellosis, are *zoonotic* — which means they can affect both animals and people, and may have significant health effects on humans.

Finally, it is important that youth livestock exhibitors are “good citizens” of the livestock industry. Transporting animals to numerous locations without recognition of the

potential problems this can cause is not “good citizenship.” Even casual contact with animals when an exhibitor visits a neighboring farm may be enough to cause a disease outbreak, if the exhibitor is not paying attention to sanitation and biosecurity practices.

### How are Diseases Introduced to a Herd or Farm?

The most common way diseases are introduced is animal to animal contact. However, this is certainly not the only way that a disease can be introduced. A “carrier” of a disease might be the animal that was taken to a show and brought back home, or it may be anything or anyone that comes in contact with other animals and/or equipment. Manure on clothing or shoes, mucus discharge from animals that is rubbed on clothing, bedding in trailers, and feed and water troughs all can introduce disease-causing virus or bacteria into herds.

### How do you Protect the Health of Animals?

There are three actions to apply biosecurity: 1) not introducing new pathogens, 2) not allowing transmission of pathogens, and 3) vaccination. The first action is to simply not bring animals home that have been at a show or fair. If animals do return to your farm, a key action to prevent transmission of pathogens is to quarantine all animals that have been away. Quarantine means that there should be no contact between the animals that have been off the farm and other production animals on your farm. This means maintaining separate facilities for the animals that may be traveling on and off the farm. The facilities should be at least 300 yards apart, and a greater distance, up to 2 miles, is best. For most diseases, 21 days of isolation is necessary to make sure that there is no evidence of an incoming disease. For some diseases, tests on the isolated animals also can be done before returning the animals to the home herd. When caring for animals, always care for the home herd first, and finish the chore routine with the isolated animals. Boots and coveralls/coats that are worn around

the isolated animals should not be worn when working with the home herd. One solution is to dedicate a pair of boots and coveralls to the isolation facility and only use them with that facility and the isolated animals. By doing these things, you minimize the risk of the chore person being the carrier of disease agents from the returned animals to the home herd.

A second way to prevent transmission of pathogens is thorough cleaning, disinfection and drying of any equipment, clothing, trailers or other items that have been exposed to animals from different sources. The organisms that cause many diseases can live for a long time in manure or bedding, or may be carried on clothing. For example, organisms that cause salmonellosis have been shown to live in manure for over two months. A proper biosecurity plan includes changing clothing and footwear when returning home to care for the home herd following a live-stock event.

Finally, it is possible to vaccinate animals to stimulate immunity against certain diseases. Vaccines make it less likely that animals exposed to particular pathogens get sick. Work with your local veterinarian to develop a vaccination plan for show animals and the home herd before the show season begins. For most diseases a minimum of two to three weeks after the last required vaccination dose is needed to develop adequate immunity. When using vaccinations or any other medications, always keep records and carefully observe withdrawal times to prevent the possibility of an animal going to harvest before the withdrawal time is completed.

### **Are There Specific Diseases Producers Should Be Aware Of?**

Swine producers must be especially aware of biosecurity. **Porcine Reproductive and Respiratory Syndrome (PRRS)** is a disease that can have many forms, including reproductive problems such as stillborn pigs, abortions and infertility, high death loss in nursery pigs, and secondary infections, poor growth, and respiratory problems in growing and finishing hogs. It can be a particular problem in animals that are transported among locations, as it may not be obvious that a pig has the disease, yet it could be an active carrier that infects all the pigs it has contact with. Infection of a herd with PRRS can result in great economic losses because the losses span all aspects of the herd, from sows to nursery pigs to finishing hogs.

In states that have numerous non-terminal swine shows, problems with diseases such as **transmissible gastroenteritis (TGE)** have been noted. Obvious signs of this disease, including vomiting and a watery diarrhea, have increased throughout the “show season.”

**Mycoplasma pneumonia** is a long-lasting disease that results in slow growth and reduced efficiency. The disease often affects entire herds, although it can be managed through vaccination.

**Pseudorabies (PRV)** is a disease that has been nearly eradicated through a federal, state and industry partnership in the National PRV Eradication program. However, constant adherence to biosecurity measures is critical in keeping this

disease under control, as outbreaks from 2001 in Nebraska, Iowa, Minnesota and other states illustrate.

Outbreaks of **erysipelas** also were found among a number of county fair shows in Iowa during 2001. Symptoms of this disease include purple diamond-shaped skin lesions, lameness and painful movement and sudden death.

Poultry producers also must be very aware of biosecurity. **Avian influenza** (bird flu) and **exotic Newcastle disease** have had devastating effects nationally in the past two years.

In cattle a number of diseases are transmitted at exhibitions, including the “shipping fever” viruses, *Salmonella* and ringworm. There are numerous viruses that cause **shipping fever**. These viruses cause respiratory disease (pneumonia) and are easily transmitted during shows when cattle are commingled with cattle from many other sources at a time when they may have lower resistance to infection because of stressors such as shipping, dust and changes in feed and water. Vaccination for the shipping fever viruses, done far enough in advance that cattle have time to build immunity, can help control this problem. The same stressors also make **Salmonella** and **ringworm** more likely to cause disease. *Salmonella* is an intestinal bacteria that causes diarrhea. It also causes severe disease in people. Ringworm is a fungus infection of the skin that may also infect people.

In sheep and goats, one of the diseases that exhibitors should be especially aware of is **club lamb fungus**. This ringworm-like disease is caused by a fungus and results in thick, scaly areas on the sheep which appear as open sores if the scabs and wool are removed. It is highly contagious and also can infect humans. Lambs in the active stage of the fungus, which is prior to the regrowth of wool, should not be exhibited and handlers should use caution to avoid contracting the disease.

**Contagious ecthyma, or sore mouth**, is a viral infection that causes sores around the mouth, nose, feet and udders of sheep. It also causes sores on the skin of people. Contagious abscesses caused by *Corynebacterium pseudotuberculosis* can also be spread by direct contact or when sheep or goats contact contaminated gates and feeders.

**Scrapie** is a disease that is currently being monitored by USDA and all potential breeding sheep must be identified in a national program. The disease does not appear to be contagious, but it is important to follow the USDA guidelines for identification of breeding sheep. Questions regarding Scrapie Flock Certification Program should be directed to the local USDA-APHIS Veterinary Services Office in Lincoln, NE at (402) 434-2300.

### **What Determines How Fast Diseases Spread or Can Be Controlled?**

Some pathogens are more contagious than others, meaning they spread from animal to animal easier. Some organisms are more pathogenic, meaning they cause more obvious signs of disease. Finally, the way we raise livestock may make it

# How Do You Begin a Biosecurity Plan?

The basic steps of a good biosecurity plan appropriate for youth livestock exhibitors are listed below. For individuals who have additional concerns, a more detailed plan should be developed with assistance from a veterinarian.

## *Before and During Shows:*

- Do not exhibit animals that have clinical signs of any contagious disease.
- Working with your veterinarian, develop a vaccination program appropriate for your animals.
- Have your animals checked by a veterinarian and a health certificate issued (many shows require this) prior to the fair. This lessens the risk that unhealthy appearing animals go to shows.
- Change or wash clothing and shoes worn at the fair before returning to work with other animals at home.
- Do not share equipment among exhibitors, unless it is disinfected between uses. Ringworm and club lamb fungus are rapidly spread through contaminated clippers. Other diseases can be spread through shared use of feeding and watering equipment.
- As much as possible, use separate feeding and watering equipment for the show animals and home-based animals. Ideally, there should be no common equipment between the two groups of animals.
- When handling animals that are actively infected with ringworm or club lamb fungus, wear rubber gloves and wash with a detergent soap after handling.
- Many shows for market animals have the option of selling the animal for harvest at the conclusion of the show. Seriously consider this option when disease transmission is a concern.
- Support the requirement and enforcement of animal health regulations.

## *After Bringing Animals Home from a Show:*

- Isolate animals that you take home for a minimum of 21 days before reintroducing them to your flock or herd. Animals should be separated by a minimum of 300 yards. This will allow for any signs of disease to appear before the animal has a chance to infect other animals.
- Closely monitor all animals for fever and other signs of infection.
- Complete chores in a planned order so that the animals that have been away from the farm are always the last ones cared for.
- There should be a complete change of clothing and shoes worn at the fair, before returning to work with other animals at home. Fair clothing and footwear should be thoroughly washed before wearing it around the livestock at home.
- Any feeding, watering or other equipment that has been to the show should be thoroughly cleaned and disinfected before using it with home based animals.
- Have a planned procedure for cleaning and disinfecting transport vehicles.

easier or more difficult for pathogens to move from animal to animal, or farm to farm.

Typically swine and poultry are kept in closer confinement than other species. Animal growth and comfort have been enhanced through the more constant temperatures and humidity provided by confinement and enclosed facilities. However, this, combined with the additional direct contact between animals in small spaces means that there is greater opportunity for disease to spread and for it to spread quickly among all animals, often before control measures can be taken. In comparison, cattle and sheep are typically housed in outdoor lots or pastures where there is increased distance between animals and disease-causing agents are exposed to more extremes in temperature and humidity which can kill the bacteria or viruses.

There are also differences in the diseases, how they spread and how they can be controlled. For example, **PRRS** control is very difficult. Because PRRS has an extremely long and often variable incubation period, an animal may be a carrier and shedding the disease before it shows any clinical signs. Even if blood testing is done, several common tests may indicate no infection, yet the virus may reside in internal organs. It is possible for the pig to begin shedding the virus again after a period of stress. So, it is not unlikely that a healthy appearing pig that is taken to a show or event could be infecting every other pig at the event with the PRRS virus. This, along with the ability of the disease to appear in many different forms, to reappear after apparent recovery, and the ability of the virus to mutate rapidly, all contribute to the difficulty of control. In comparison, **PRV** can be controlled when proper biosecurity measures are followed, but lessening these biosecurity measures can cause reappearance of the disease.

In cattle, **bovine viral diarrhea virus (BVDV)** poses one of the greatest concerns about abortions and reproductive problems. This is a viral infection that spreads by direct animal to animal contact. The farther cattle are from each other, the less likely it is to spread. But BVDV has a special trick that enables it to move readily from farm to farm. When cows are infected with BVDV while they are pregnant, the calf may be born persistently infected with the virus. These persistently infected calves may look healthy, but they are the source of a tremendous amount of virus exposure to other

cattle. You may buy a healthy looking, persistently infected calf and introduce the virus into your herd without knowing it. It is also possible for your show cattle to take BVDV back to your home herd. The University of Nebraska–Lincoln has pioneered a method of testing calves using a notch of skin from the ear to identify persistently infected calves to help control this problem.

Another disease with an unapparent “carrier state” is **Johne’s disease**. The intestinal bacteria that causes Johne’s disease is very slow growing. It takes years from the time an animal is infected to when the animal shows the signs of disease, including weight loss and diarrhea. The infection usually occurs in young calves, but the infected calf looks healthy until it is an adult, 2-7 years of age. It may be years before you realize the disease has been introduced into your herd after purchasing an infected animal.

### Summary

Fairs and shows are an enjoyable activity for many people. However, it is important that exhibitors and their families have an understanding of measures that need to be taken to prevent the spread of disease. In the long run, this will benefit the exhibitors, as their animals will be healthier and grow better, and it will also benefit the livestock industry throughout the state, as the spread of disease will be lessened.

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