A Champion's Guide to Youth Swine Exhibition:

Biosecurity and Your Pig Project

AMERICAN ASSOCIATION OF SWINE VETERINARIANS

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Did you know that regardless of how many pigs you care for, whether it's a single show pig or thousands of market hogs, you are part of the pork industry? And, just as you are responsible for keeping your show pig or pigs healthy, you share the responsibility of keeping all of the pigs in the United States healthy as well.

A healthy swine herd starts with raising healthy pigs at home. And raising a healthy pig starts with biosecurity.

Bi - o - se – cu- ri- ty (bahy-oh-si-kyoor-i-tee)

- Precautions taken to minimize the risk of introducing an infectious disease into an animal population. *Source: United States Department of Agriculture*
- Any of the policies and measures taken for protecting a nation's food supply and agricultural resources. *Source: Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.7)*
- The set of preventative measures taken to reduce the risk of disease introduction or transmission. *Source: Youth PQA Plus manual.*

Biosecurity begins when you purchase your pigs and is a continuous process. It involves preventing people, equipment or other animals from spreading disease to your pigs. For example, you can prevent disease from spreading by using clean, farm-specific clothes and boots when working with your animals. Disease can also be prevented by cleaning, disinfecting and allowing vehicles and show equipment to dry after a show; and finally, disease can be prevented by isolating animals that have just been purchased or that are coming back from a show.

This booklet is intended for youth exhibitors of all ages and levels of experience. In it, you will find recommended biosecurity guidelines to follow at your farm and when taking pigs to exhibitions.

Remember that your pigs have a better chance of remaining healthy if you work closely with a veterinarian. A veterinarian can help you adapt the biosecurity guidelines to the type of production system you have at home and to the diseases in your area.

In this booklet you also will find a brief description of swine diseases that you should be familiar with. Discuss this information with your veterinarian and make sure you understand the routes of transmission and clinical signs, as well as some ways you can prevent these diseases in your pigs. If your pigs do get sick, your veterinarian can accurately diagnose and treat the disease. Following a good biosecurity program is the best way to control the spread of disease.

Swine Health Biosecurity Control Points:

Consult with your veterinarian to control diseases on your farm and at the swine exhibition. An ongoing relationship with your swine herd veterinarian is an important part of a good swine exhibition project. Developing and maintaining a herd biosecurity program is crucial as you work to control diseases on your farm and to prevent disease transmission as pigs are commingled during swine exhibitions. Consult with your veterinarian before you enter an exhibition, in order to develop a vaccination protocol and biosecurity plan specific to your pigs. Continue to discuss any disease problems or production losses with your veterinarian as you move forward with a biosecurity plan.

Isolation of incoming pigs or pigs returning from a fair or show provides protection against any new additions to your swine herd. It is important to remember that direct contact between infected and uninfected pigs is the easiest way to spread disease.

The Sanitation Process

Cleaning: This process involves removing all dirt and manure from equipment. It is an important step in the overall sanitation process, because some disinfectant products can be used up or inactivated by dirt and manure. Hot water and detergents, similar to those used for dish washing, may make cleaning much easier.

Disinfection: Disinfectant products are chemical agents that inactivate or kill pathogens, such as bacteria and viruses, and should be used only when all visible manure and dirt have been removed. Proper disinfection reduces the number of pathogens which, in turn, helps to decrease the risk of infectious disease transmission. Commonly used disinfectant products can be purchased at a farm supply store. Always consult the disinfectant label claims regarding proper dilution and contact times and be sure to work with your veterinarian to make a decision on which product will work best for your situation.

Drying: Drying is crucial to the process of equipment cleaning because drying kills many infectious organisms. Without including a drying step in your cleaning process, the risk of allowing infection to survive and multiply may increase.

Isolation of incoming pigs or pigs returning from a fair or show provides protection against spread of disease. In addition, isolation allows time for producers to watch new or returning pigs for signs of disease before those animals enter into your swine herd. Isolation gives producers the opportunity to test pigs to make sure that they are disease-free and to vaccinate those animals against diseases that are already in a herd.

Consult with your veterinarian to determine an appropriate isolation strategy for your pigs.

Clean and disinfect all clothing and equipment associated with a swine exhibit before exposing the same clothing and equipment to a "home herd". Contact with livestock equipment can expose project pigs to many types of infectious diseases. Following the exhibition, it is important that all clothing and equipment associated with the show be cleaned and disinfected. The exhibitor should also be sure to thoroughly wash his/her hands and arms in warm, soapy water and should shower before coming into contact with pigs at the home farm. Clothing can simply be washed, but all equipment needs to undergo a more thorough cleaning process. This procedure should take place in an area that is completely separate from the home swine herd, to avoid indirect transmission of a pathogen. The sanitation process should include the cleaning and disinfection process found on page 3.

Minimize the contact between visitors and your swine herd or show pigs. Since people can transfer infection from their body and/or clothing, to your pigs, limit visitors to only those who have a reason to be there. Always make sure that visitors wear clean boots and clothing when they are around your pigs and that they only visit your farm when you are present.

Control birds, wildlife, and rodents that may have exposure to your swine herd and exhibit swine. Control of birds, wildlife, and rodents is an important part of your biosecurity plan because infection can be transmitted by these pests. Actions that help control such pests include controlling the vegetation within and surrounding the unit, cleaning up any feed spills, getting rid of any debris that may have accumulated on your farm, and removal of dead pigs.

Locate your swine facility at a distance from unrelated swine operations. Aerosol spread of pathogens has been reported to occur approximately 2 miles around an infected farm. When possible, locating your facility at least 2 miles from other swine can minimize the risk of infection through the air.

Minimize employee contact with unrelated swine operations. Diseases can be transferred from herd to herd by people. Farm employees can carry bacteria or viruses on their body and/or clothing. It is important to discuss with any employees or people working with your swine project or herd about what other animals they have had exposure to in the last week and to talk to them about the potential for disease transmission. Just as you would be concerned about your pigs being in contact with other pigs, you also should be concerned about your pigs' exposure to humans that may have had contact with other swine.

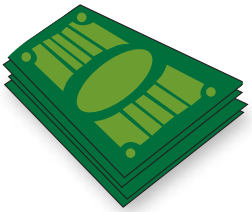
Dispose of swine carcasses in a timely manner, according to state regulations and biosecurity protocols. In spite of your very best efforts, swine will, at times, die as a result of injury, disease or other factors. Management of dead pigs is an extremely important aspect of swine production. There are many different options for the disposal of these carcasses. They include rendering, burial, incineration and composting. Check with your local animal health officials to determine which method(s) is/are approved for use in your state. Regardless of what that choice may be, keep in mind that disposing of carcasses in a timely manner is important to decrease pest problems associated with the carcass.

- **Incineration:** use of a heat-generating incinerator to break down swine carcasses.
- **Rendering:** a process that gives a producer the chance to create a recyclable feed product by submitting the carcasses to a rendering company.
- **Composting:** the process of placing carcasses in layers with a carbon source to allow the natural decomposition process to break down the carcass.

Ensure that any purchased or delivered semen or breeding animals of any sort are the product of "minimal disease" animals. Some infectious diseases can be spread by the process of breeding. When making decisions involving pig breeding, remember to take into account the health status of the semen-donating or natural servicing boar and the sow.

Decrease the amount of on-farm traffic by controlling the flow of supply and product deliveries. Vehicles have the potential to carry infection onto your farm. Because on-farm traffic and product deliveries are a reality for most producers, it is important to control the areas to which such vehicles have access. This can be done by designating a specific area for off-farm traffic and attempting to make such an area one that is not closely associated with your swine herd or projects.

Purchasing Your Swine Project



Every exhibitor is looking for the next champion pig. It is important to begin that search by not only evaluating your potential show pigs, but also the person who is providing the pigs. The performance and health history of the source herd, the facilities in which the pigs are housed, and the involvement of a veterinarian with the herd are good places to start that evaluation.

You and Your Veterinarian

As you complete the process of selecting and acquiring your show pig, it is important to keep in mind that you also should be working on developing a relationship with a veterinarian. Before you bring a newly purchased pig to your farm, you and your veterinarian should have a biosecurity plan in place. A veterinarian is a valuable and important resource for the development of this plan that he/she will develop specifically for your operation.

If this is not the only pig arriving at your farm or if you plan to ship pigs on and off of your farm in the future, plan ahead for your purchase by creating an isolation area for new additions and pigs returning to your swine herd. The location of this site will vary from farm to farm, but should be remote from the rest of your herd. Your new pigs should spend a period of time in this isolation area before entering or re-entering your herd.

Important Questions to Ask

Information about the performance of the source herd is helpful as you determine the potential show-ring success of an animal, in addition to providing insight into the overall health status of the swine herd. A history of high-performing animals indicates that disease has not been a major problem for the swine herd.

The history of a source herd has serious implications on the future of both your project and your home swine herd.

Biosecurity for your Project

The facilities in which your potential show pigs are currently housed will give you a good indication of what diseases they may have been exposed to. When you visit the source farm, look around and ask questions such as the following:

1. Do you have a biosecurity plan currently in place?
2. Do you have a herd veterinarian?
3. Have your pigs experienced any disease problems or production losses in the past six months?
4. Have you had to call a veterinarian to your farm for any reason, other than for a routine visit, over the course of the last six months?
5. How many pigs have you sold for exhibition purposes?
6. How well have the pigs you have previously sold performed?
7. Do you require that pigs entering your herd go through a period of isolation?
8. What is the vaccination history of this herd?
9. Has this animal left this farm for any reason?
10. Where are pigs entering your herd held for a period of isolation?
11. Do pigs spend their entire lives in this one site or are they moved to different sites?
12. What is your pest control program like?

While you are looking at the swine facilities, be sure to notice such things as the maintenance and upkeep of the farm. Are the equipment and facilities in good working order? Is the grass cut and are the weeds properly managed? Is there evidence of rodent infestation? Are rodent traps present and maintained?

Preparing for a Swine Exhibition

After bringing your show pig home, work with a veterinarian to establish an appropriate vaccination program that considers the diseases in your area and the vaccinations those pigs have already received. Make sure you and your veterinarian establish a biosecurity protocol for your herd as well. Before entering a pig in a show or fair, it is important that you take actions to protect that animal and your home swine herd from the spread of infectious disease.

Ensure, before leaving for an event, that all fair animals have been vaccinated according to the veterinarian's recommendations and any requirements of the show that you will be attending. It is important to follow the herd biosecurity program you developed with the help of your veterinarian as you prepare your show pigs for competition. A more complete description of items to be included in your biosecurity protocol can be found in the section, *Swine Health.*

Every show, county, and state has different requirements for swine exhibitors and their pigs. Before you attend a show, be sure to complete all tests required by that show, county or state. Make sure to properly complete and submit any required paperwork in a timely manner.

Before you leave your farm with your swine project for a show, be sure to clean and disinfect all transportation and show-related equipment. Remember that these items have the ability to transmit disease to and from other pigs.

Finally, never bring an animal to a show, fair, or exhibition that is not healthy. Take special care to thoroughly evaluate your pigs on a daily basis, before leaving for a show. Leave any unhealthy pigs behind and contact your veterinarian with any health concerns.

If it appears that your herd is experiencing a disease outbreak, it may be possible for your pigs to infect other animals. Even though your pigs may not appear sick, they could still be contagious. Discuss your concern with your veterinarian and together decide if you and your pigs should attend the show. Always be considerate of protecting the health of all the animals at the show.

At the Show

While you are at a swine show, fair, or exhibition, it is very important to continue to act in a way that will decrease the spread of infectious disease. Because the best way to spread disease is by direct contact with other hogs, the best way to prevent this spread is to decrease any unnecessary contact with unrelated swine during the exhibition. In addition, decrease unnecessary contact with manure from other animals that are at the event and with the general public present at the show.

Remember to follow the same strict biosecurity protocol while you are at the exhibition as you would at home. Refrain from sharing equipment with other exhibitors or using equipment that has come in contact with other swine. Thoroughly wash your hand, arms and any part of your body that came in contact with pigs with warm, soapy water.

Ultimately, it is important to recognize the vital roles that swine exhibitors play in stopping disease transmission among all pigs. Work to protect your show pigs and any other pigs from infection by incorporating exhibit biosecurity safeguards into your overall biosecurity program. Be sure to contact show officials to ask about any existing show protocols and work with your veterinarian to develop a plan specific to your operation.

Returning Home

Adhering to a biosecurity protocol when you return from a swine show is extremely important. Before returning to work with your home swine herd, be sure to clean and disinfect all transportation and show-related equipment.

It is also very important that all swine taken to an exhibition be isolated from the rest of the herd upon return to your home farm. Work with your herd veterinarian to develop a biosecurity program that addresses the site and length of isolation.

The best way to avoid the risk of transmitting an infectious disease by way of a returning show pig is to limit your participation to terminal shows. A great deal of swine shows are terminal and significantly reduce the risk of disease transmission to a home swine herd.

As you begin to competitively show swine, it is important to fully appreciate the responsibility that you have as a part of the swine industry. Controlling swine disease is the duty of each member of our industry.

Swine Diseases to Note:

The following swine diseases are commonly associated with the commingling of pigs at swine exhibition events. Disease descriptions have been included in order to provide a framework for disease identification and associated clinical signs. It is important that you remember that the health status of your herd may change at any time. If you notice any health problems in your pigs, be sure to contact your veterinarian as soon as possible.

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Glossary

Breeding stock: boars, gilts and/or sows that are involved in swine reproduction and provide the foundation of a swine herd.

Pre-weaned pigs: pigs that have not yet been taken from the sow.

Finishing pigs: pigs that are in the last stage of the swine production cycle and will continue to be fed until they are ready to be taken to harvest.

Fomite: any inanimate object or substance capable of carrying infection. Has the ability to transfer infection from one pig to another pig. In the case of a swine operation, fomites may be clothing, boots, vehicles, etc.

Porcine Reproductive and Respiratory Syndrome (PRRS)	
Disease Details PRRS is a major problem for the swine industry, and, in 2005, was estimated to cost the industry nearly $560 million per year.	**Transmission** Direct transmission (pig-to-pig contact, aerosol, fecal-oral, and venereal), indirect transmission (*fomite* contamination), and vector-borne transmission.
Clinical Signs PRRS is a viral disease that causes a variety of problems in the swine herd. PRRS may cause high abortion rates in *breeding stock,* death in *pre-weaned pigs,* and respiratory problems in *finishing pigs.*	**Prevention** The best way to prevent PRRS is to practice good biosecurity by quarantining new and returning stock and controlling equipment, vehicle, and human traffic through your herd. A PRRS vaccination also is available and can be acquired from your local veterinarian.

Porcine Circovirus Associated Diseases (PCVAD)	
Disease Details PCVAD have become some of the most significant viral diseases affecting the global swine herd.	**Transmission** Direct, indirect, and vector-borne transmission (Note: It is extremely difficult to determine the extent of means of transmission of PCVAD.)
Clinical Signs Symptoms of PCVAD include respiratory, enteric, reproductive and a variety of other diseases.	**Prevention** Limited pig-to-pig contact, decreased stress levels in your pigs, good hygiene, and good nutrition are the best ways to prevent and control PCVAD. A vaccine also is available for prevention purpose and can be acquired through your veterinarian.

Transmissible Gastro-enteritis (TGE)	
Disease Details TGE is a highly infectious disease that may appear in many forms, and can rapidly spread throughout a herd.	**Transmission** Direct transmission (fecal-oral), vector-borne transmission
Clinical Signs Affected animals generally display signs of vomiting, diarrhea, and a lack of desire to eat.	**Prevention** The most important preventative measures involved in managing TGE are biosecurity measures such as traffic and pest control. A vaccine is available for TGE prevention.

If you notice any health problems in your pigs, be sure to contact your veterinarian as soon as possible. Your veterinarian will work with you to develop a treatment schedule.

Swine Influenza Virus (SIV)	
Disease Details SIV is common in swine herds. It rarely causes disease in humans, but it can create new strains and infections.	**Transmission** Direct transmission (pig-to-pig contact, human-to-pig contact, aerosol) and indirect transmission (fomites)
Clinical Signs When this virus enters a herd it is common to observe a rapid, explosive outbreak of respiratory disease. You may see coughing, pneumonia, fever and animals that are unwilling to eat.	**Prevention** Adhere to a strict biosecurity protocol, and reduce the exposure of your pigs to SIV. Don't buy pigs from sources where SIV is active. Preventative vaccination is available from your veterinarian.

Note: Vaccinating your show pigs for influenza prior to exhibition also may reduce the potential for human illness.

If you notice any health problems in your pigs, be sure to contact your veterinarian as soon as possible. Your veterinarian will work with you to develop a treatment schedule.

Porcine Parvovirus (PPV)	
Disease Details PPV is a viral disease of pigs that is typically, when present in a swine herd, found in sows.	**Transmission** Direct transmission (fecal-oral, venereal)
Clinical Signs Associated with reproductive problems including abortion, small litters, stillbirths, neonatal deaths and weak piglets. Generally, no noticeable disease occurs in non-pregnant pigs.	**Prevention** Vaccinate gilts prior to breeding. Once a gilt is exposed to PPV, through vaccination, she will become immune. Use good biosecurity measures.

Mycoplasma hyopneumoniae	
Disease Details *M. hyopneumoniae* is a bacterial infection that occurs throughout the world's pig population, causing varied degrees of respiratory disease.	**Transmission** Direct transmission (pig-to-pig contact, aerosol)
Clinical Signs When it occurs as an infection by itself, it has only a mild effect on pigs. When co-infections such as PRRS, PCVAD, SIV, *APP,* or *Haemophilus parasuis* also occur, the respiratory problems result in more serious effects on the infected pig.	**Prevention** Adhere to a strict biosecurity protocol. Quarantine incoming or returning pigs and check to make sure that the herd from which you are purchasing is *M. hyopneumoniae*-free. Decrease stress levels in your pigs. *M. hyopneumoniae* vaccinations exist and are regularly used to control infection.

Actinobacillus pleuro-pneumoniae (APP)	
Disease Details There are multiple strains of the bacterium APP. Some strains do not produce disease; others can cause severe respiratory distress.	**Transmission** Direct transmission (pig-to-pig contact, aerosol), indirect transmission (fomites)
Clinical Signs The signs of infection with a disease-causing strain of APP can range from severe respiratory difficulty to sudden death with a bloody nose.	**Prevention** Use a good biosecurity protocol. Quarantine new animals before they enter. Decrease the stress level in your herd. An APP vaccine exists and can be obtained through your veterinarian.

Routes of Transmission:

Direct Transmission: the spread of disease from one host to another host. This type of disease transmission requires direct contact with an infected individual. There are several specific types of direct transmission:

- **Contact Transmission (pig-to-pig):** infection as a result of direct contact with an infected individual
- **Aerosol/Droplet Transmission:** exposure to airborne droplets from the eye, nose, or mouth and/or contaminated dust
- **Fecal-Oral Transmission:** ingestion of pathogens that originated in the digestive system
- **Venereal Transmission:** transmission as a result of breeding activity

Indirect Transmission: The spread of disease from host to host by means of a contaminated surface, such as a fomite.

Vector-borne Transmission: The spread of disease by means of an intermediate host animal who is capable of spreading the disease. A vector is typically an invertebrate animal, such as a mosquito or a tick.

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