

Isolation Procedures for Farrowing Operations

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Almost every swine breeding herd will at some time receive breeding stock replacements. These incoming animals are a possible source of herd disease. Once introduced, diseases such as Porcine Reproductive and Respiratory Syndrome (PRRS), pseudorabies (PRV), Actinobacillus Pleuropneumonia (APP) transmissible gastroenteritis (TGE) and swine dysentery may be very difficult and costly to control or eliminate.

Procedures for preventing or minimizing the risk of introducing these diseases include:

- Isolating incoming breeding swine for 60 days;
- Blood testing before introducing replacement animals into the main herd;
- Vaccinating replacements; and
- Following other management techniques.

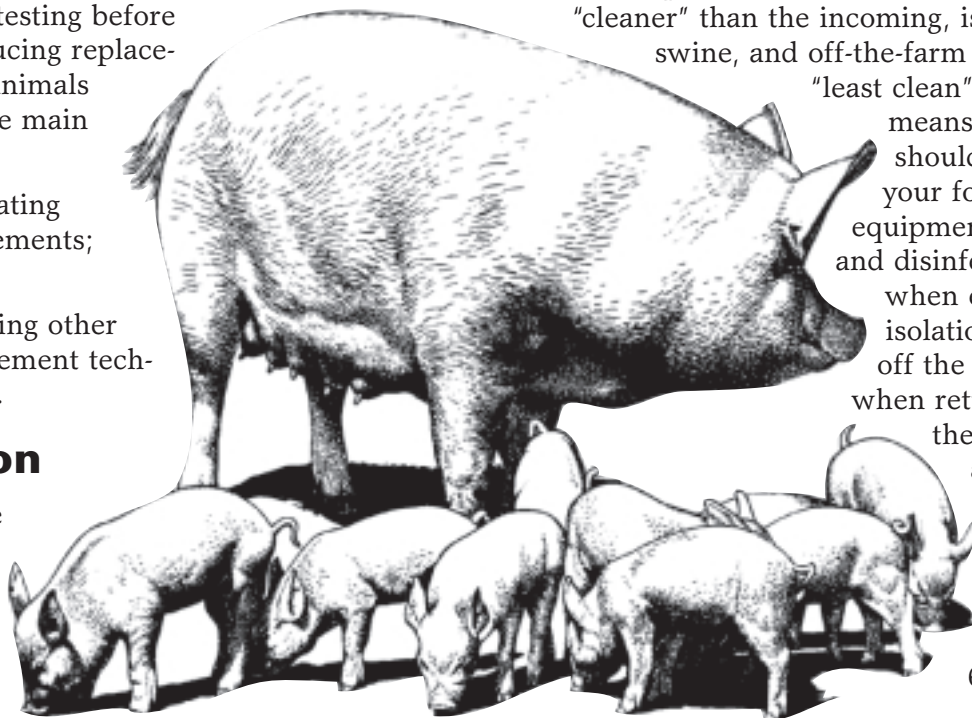
Isolation

To isolate new arrivals, you can use a simple set of

pens physically separated from and not in fence-line contact with the main herd. Locate the isolation area on the east side of the main herd, so predominantly southerly and northerly winds do not spread airborne viruses and bacteria from the isolated animals to the main herd. Although isolation areas are sometimes within 50 yards of breeding and finishing areas, these should be in a remote area, well away (2 or more miles) from the main herd. Providing adequate shelter, feed and water and following other good swine management practices are also important.

When entering and leaving the isolation area, always think of the main herd as "cleaner" than the incoming, isolated swine, and off-the-farm areas as the

"least clean" of all. This means that you should change your footwear and equipment or clean and disinfect them when entering the isolation area from off the farm or when returning from the isolation area back to the main herd. During the last 30 days of the 60-day isola-



tion period, it is recommended to expose incoming swine to manure or cull animals from the main herd. This is considered to be the acclimatization period of isolation.

These “natural vaccination” and “sentinel animal” techniques are effective methods for stimulating immunity in replacement animals against disease-causing microorganisms in the herd. If a “sentinel” cull animal gets sick or dies after being exposed to the isolated animals, this may mean that the new stock have a serious disease not already present in the main herd and is a reason not to introduce these animals into the herd.

Remember: The main reason for isolating new breeding swine is to prevent the herd from being exposed to new disease-causing organisms. During the isolation period, keep feed and water free of antibacterial agents to avoid “covering up” signs of disease. If breeding swine in isolation become sick, treat them individually after a diagnosis is made. When a serious disease is diagnosed, cull the sick animals (after they recover) and all the swine in contact with them (after the appropriate drug withdrawal time, if they have been treated). Do not introduce these swine into the herd.

Blood Testing

Blood testing of isolated swine may prevent certain major diseases from entering the herd. PRRS, pseudorabies, APP, TGE, brucellosis and leptospirosis (*L. pomona* and *L. bratislava*) may be diagnosed through blood testing. Blood testing helps to identify serious disease-causing organisms that new breeding swine may carry but show no signs of. Producers may have a veterinarian collect blood and test only once during the 60-day isolation period. However, some producers sample and test twice, at the beginning and end of isolation.

If any animal tests positive for a serious disease, generally the whole group in isolation should be culled and sent to market — unless that particular disease is already present in the herd. For example, previous TGE infection in a breeding herd lessens the importance of TGE testing in isolated swine. Should the isolated swine be carrying TGE virus, the 60-day

isolation period gives time for reduction of virus shedding from a TGE-positive animal, thereby reducing the chances for a new TGE outbreak.

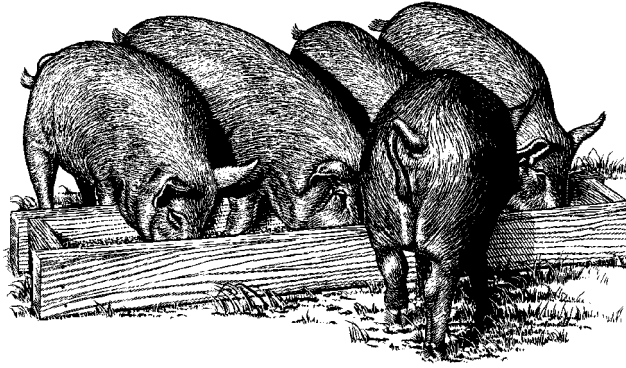
A different strategy is used with PRRS—that is to **not** allow new breeding swine testing positive to PRRS to enter a PRRS positive or negative herd. This is because there are many types of PRRS viruses, which vary in disease-causing capacity and may recombine with each other and result in tremendous economic loss in the herd. For specific advice on management of groups of swine during the isolation period, consult a veterinarian.

Previous vaccination for TGE, APP or PRRS may make it difficult for a veterinarian to interpret the blood tests for these diseases. It may be more practical to vaccinate than test for 6-way leptospirosis. Pseudorabies vaccine is not routinely used in Texas swine, and no brucellosis vaccine is available for swine.

Pseudorabies and brucellosis are state and federally regulated diseases. You may be required to have all animals in a lot tested for these diseases. Positive blood tests in isolated swine can result in the quarantine of animals in both the isolation area and the main herd, if the groups are close together. However, managing the isolation area properly can easily prevent the spread of PRV or brucellosis to the main herd.

Generally, when few replacements are involved (such as boars), perform all tests to be run on each individual animal. When working with many replacements (such as gilts), you can test a percentage of the group (but no less than 20 percent of the animals bought from each source). It is best to test all incoming swine for PRRS if trying to prevent this disease. All tests for the major diseases mentioned above can be performed on a single blood sample per animal.

Even though breeding swine may originate from Qualified-PRV-Free and Validated-Brucellosis-Free herds, or may have individually tested negative for important swine diseases, this does not absolutely guarantee that they are free of these specific diseases. Incoming swine may have been exposed to a



disease-causing organism in transit, but may be in a stage of infection that a blood test cannot detect yet. Also, once a pig recovers from a disease, blood testing does not always continue to show that pig to be infected. This happens when the pig is not re-exposed to the same disease-causing organism, and its immunity (from the original exposure) drops to undetectable levels. In either case, these animals appear healthy even though they may be disease spreaders. So, even though the incoming swine may not show signs of disease, you must always isolate and test them (even though no single blood test is 100 percent accurate for many disease-causing organisms).

When clinical disease signs such as diarrhea, vomiting, high fever, persistent coughing or death occur, consult a veterinarian for diagnosis. If a serious disease is identified, cull the entire isolated group. When you know that diseases such as PRRS, TGE or APP already exist in your main herd, you should probably use planned natural infection or vaccination of isolated, incoming animals. This technique is usually more effective than allowing haphazard infection to occur after the new animals are introduced into the main herd.

Vaccination

Use the last 30 days of the 60-day isolation period to vaccinate new breeding swine against economically important swine diseases:

- Commonly present in most herds;
- Difficult or impossible to prevent from entering a herd; and
- For which effective vaccines exist.

However, you should wait to vaccinate until appropriate blood tests are confirmed to be negative.

Always remember to **vaccinate only healthy swine**. Vaccines generally recommended for use in breeding swine are discussed in detail in Texas Agricultural Extension Service publication L-2192, "Vaccines for Farrowing Operations." They include vaccines for erysipelas, leptospirosis, parvovirus and *E. coli*. Administer erysipelas, leptospirosis and parvovirus vaccines twice during isolation, at a 3- to 4-week interval. Give booster vaccines for these three diseases to females at weaning and to boars every 6 months.

You can both test and vaccinate for lepto during isolation. Lepto-negative swine probably do not spread the disease, and vaccination can prevent economic losses if lepto should be transmitted by rodents or other swine to incoming animals. Many producers choose to lepto vaccinate routinely and forgo testing.

E. coli vaccines usually are not given to boars, but are administered to female swine about 5 weeks and again at 2 weeks before farrowing. You should also give a booster vaccination 2 weeks before each subsequent farrowing. Vaccinating sows for *E. coli* before farrowing will prevent or minimize diarrhea in young pigs. If scouring disease in piglets is usually not a problem in your operation, or if they develop it at 14 or more days old, then *E. coli* vaccination of the sows probably would not be useful.

Disease prevention procedures for PRRS are discussed in Texas Agricultural Extension Service publication L-5137, "Porcine Reproductive and Respiratory Syndrome."

Other Important Diseases

By using other specific diagnostic techniques available from your veterinarian, diseases such as internal and external parasites may be minimized or eliminated during isolation. A diagnosis of swine dysentery or severe rhinitis may require culling all the animals in the isolated group. Knowing the health of the herd from which you buy breeding swine is

very important. Buying from one "clean" source or as few "clean" sources as possible is extremely important in preventing disease.

Some producers think the risk of introducing disease with live swine is so great that they rely only on artificial insemination (AI) to produce their own replacements. However, AI is not without risks, because some diseases, such as PRRS, may be transmitted via semen. Make sure you know the disease status of the boars from which you buy semen.

Summary

Although there are many potential sources for swine disease, isolation procedures can reduce the high risk of disease introduction by incoming breeding swine. Isolation, test-

ing, vaccination and other techniques are all important elements of a properly managed isolation program. One set of isolation procedures probably will not fit every operation, but the flexibility of these procedures allows you and your veterinarian to develop a cost-effective plan that fits your individual farrowing operation.

For More Information

Some of the information in this publication comes from these sources:

Leman, A.D.; B. Straw; W.L. Mengeling; et al (eds). *Diseases of Swine*, 7th edition. Iowa State University Press: Ames, Iowa, 1992.

Proceedings of the American Association of Swine Practitioners, 1995-98.



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