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Herd Health Programs for Swine Seedstock Production

Roderick C. Tubbs, DVM, MS
Diplomate, American College of Theriogenologists
Swine Veterinarian
Commercial Agriculture Program

This guide outlines good health practices for a seedstock swine herd. Preventive practices are emphasized. Specifics vary from herd to herd and are too individualized to address in this guide. Specifics should be worked out with the herd's veterinarian.

Biosecurity

Biosecurity is the practice of managing the herd so that the least possible potential exists for bringing in diseases with people, pigs, wildlife, or mechanical vectors such as truck tires, tools, and others. It is perhaps the most important health consideration for a seedstock herd.

A location at least two miles from other pigs is most desirable from a health standpoint. If this type of location is not available, attention should be given to location of nearest pigs, prevailing winds, and general likelihood of accidental exposure to other pigs, or to wildlife or domestic pets that have been exposed to other pigs.

A perimeter chain link fence is advisable to keep out people and stray animals. Bird screens on all curtain-sided buildings reduce the potential for disease transmission by birds.

Strict visitor policies should be enforced, with only necessary personnel allowed access to pig areas. Requiring visitors to shower in, with complete change of clothes into those provided by the swine unit, is a good preventive practice. Movement directly from another swine farm onto a seedstock production herd is too risky to allow.

Feed delivery and animal load-out areas located at the farm perimeter allow animal transfer without transportation personnel entering the unit. Feed bins should be located adjacent to perimeter fencing, and a load-out area available from the last finishing building near the perimeter fence.

Alternatively, pigs could be transported to the road using farm equipment, so that livestock trucks do not enter the compound. Another alternative that is used by some seedstock producers is to build a "show" building that is separated from the main herd to accommodate visitors and allow them to view animals but not compromise herd security.

Pigs should be moved in each stage of production in a manner consistent with all-out principles of production. When a group is moved from any stage, that area should be cleaned thoroughly by power washing, then disinfected.

Pigs that leave the farm for any reason–test station, sale, fair, shows–should not return to the farm. The risk of introducing disease organisms to the herd is too great to compromise this principle.

Adding breeding stock to the herd

All incoming breeding stock should be quarantined in isolation for 30 to 60 days, a minimum of 200 yards from the primary herd. Thirty days is the minimum period for adequate isolation and observation of new breeding stock. Longer periods–40 to 60 days–offer even more security.

The initial 30-day time period is used to observe the stock for any signs of illness. During this period, feeding and animal care should be conducted at the end of the working day by employees who will not return to the main breeding herd. Clinical signs of illness disqualify the stock from addition to the main herd. A reputable supplier would be expected to notify the owners of the receiving herd if a disease break should occur in the source herd during the 30 to 60-day quarantine period.

During quarantine, the animals are retested for (at the very least) brucellosis and pseudorabies, as well as any other diseases that may be of concern depending on the source of the breeding stock. The new animals should be vaccinated twice, at least two weeks apart, for the five common strains of leptospirosis, for parvovirus, and for erysipelas.

Table 1. Procedures to perform on incoming breeding stock during the quarantine period.

Procedure	When to perform
Observe for illness	Entire quarantine period
Retest for pseudorabies and brucellosis	21 days after arrival
Vaccinate for leptospirosis, parvovirus and erysipelas	On arrival and two weeks later
De-worm and treat for lice and mange	On arrival and two weeks later
Expose to cull breeding animals and manure from herd	Last two weeks of quarantine

Vaccination for other diseases is based on their prevalence in the area and the risk of contacting the organisms involved. New breeding animals should also be treated twice, two weeks apart, for internal and external parasites. Table 1 summarizes procedures to follow during the quarantine period.

The second 30-day period is used as an acclimation period for the new breeding stock. They may be housed in fence-line contact with cull breeding animals. Exposure to manure from the herd ensures exposure and some level of immunity to pathogens that may be endemic to the receiving herd. The second 30-day period may also be a good time to test breed new boars to some market gilts, and to observe for libido and for any physical defects that may be present and were not noticed earlier.

Other methods for introducing new genetic material into a swine herd include the use of artificial insemination (AI) and embryo transfer (ET). AI has been used in the past to bring semen into seedstock herds, and is becoming increasingly popular in market-hog production units. If used properly, artificial insemination can be useful for introducing new genes while minimizing disease transmission risks.

Potential AI stud boars should be screened annually for the infectious diseases important in the local area for which a reliable diagnostic test exists. Collection and handling of semen should include strict sanitation and hygiene practices as a matter of routine. Antibiotics may be added to the semen as an additional precaution against the spread of infectious disease. Many antibiotics and combinations have been used, including penicillin, streptomycin, tylosin, and lincomycin-spectinomycin combination.

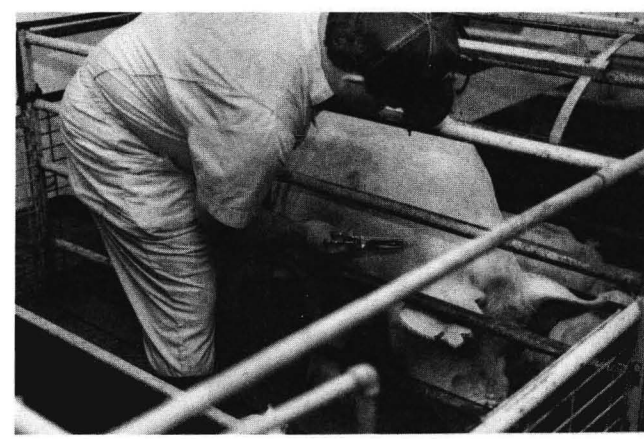
Embryo transfer as a method of introduction of new genes is not as widely used as AI, but may become more common in selected cases. The general disease control principles as discussed for AI are appropriate for ET as well.

Routine health procedures

Herd additions should originate from sources of high-health status. Precautions should be taken in locating and designing the facility and in introducing new breeding stock as discussed in the section on biosecurity. Because of the prevalence and impact of specific diseases, a vaccination program is usually practiced. Stringent prevention programs involving biosecurity practices and the routine isolation and quarantine of new animals, combined with routine surveillance and action when necessary, are the best health procedures.

Vaccination program

A combination leptospirosis/parvovirus/erysipelas vaccine should be given twice, at least two weeks apart, to all incoming breeding animals. It should also be given to all sows at weaning and to



A basic vaccination program — lepto/parvo/erysipelas — is recommended for swine seedstock producers because of the prevalence of organisms, the relatively inexpensive vaccine cost and the relative effectiveness of the vaccine.

Table 2. Routine health procedures for seedstock herds.

Procedure	When to perform
Vaccination for leptospirosis, parvovirus and erysipelas	Sows at weaning, boars twice a year
Vaccination for erysipelas	Pigs at weaning, repeat at eight weeks of age and every 60 days if necessary
Monitor fecal samples	Quarterly
Make skin scrapings and observe for clinical signs of mange	Every six months
Make slaughter checks	Quarterly if possible
Serological monitoring	Quarterly for parvovirus and brucellosis; annually or as needed for others
Feed sampling for particle size and nutrients	Every six months
Feed sampling for mycotoxins	Save sample for each grain shipment
Make nasal swabs	As needed or as determined by local veterinarian

boars twice annually. Pigs should receive erysipelas vaccine at weaning.

Vaccination for these diseases is recommended because of the prevalence of the organisms, the relatively inexpensive cost of the vaccines, and the relative effectiveness of the vaccines. Other vaccines must be evaluated on the criteria of risk of disease, cost and effectiveness.

In all cases, the vaccine program for an individual herd should be designed with the input of the herd's veterinarian. The suggestions made for the basic program–lepto/parvo/erysipelas–may need to be modified for an individual herd's situation, and timing may be changed to fit exposure and other challenges unique to a herd.

Internal and external parasite control

All incoming breeding stock should receive two treatments, two weeks apart, with external and internal parasiticides. Fecal samples monitored quarterly from each production area to determine the presence of internal parasites allow further refinement of the deworming program.

Animals in all phases of production should be observed routinely for signs of external parasites. Skin scrapings should be conducted, on a number of breeding animals appropriate for the size of the herd, every six months to check for external parasites. An external parasite control program can be designed based on the results of the monitoring.

Slaughter checks

Quarterly slaughter checks for the presence of gross lesions of ascarid migrations in the liver, pneumonia in the lungs, and atrophic rhinitis in the nasal turbinates are recommended. The skin and joints and intestinal and reproductive systems can also be observed during slaughter checks. Findings can be used to estimate the presence of disease in the herd and to refine health management procedures.

The lack of slaughter facilities in Missouri hinders the timely completion of slaughter checks that include significant numbers of samples. The number of animals needed to be able to state disease levels with confidence has been established with epidemiological and statistical methods. Unfortunately, it is very difficult to proclaim a herd as "free" of most diseases.

However, statisticians have determined the number of pigs needed for a check from a herd to provide a 95 percent degree of certainity of discovering a dis-

ease if it is present. The pertinent numbers needed for most producers are 11 and 29. In any population of more than 140 head–for example a 300-head finishing floor–an 11-head slaughter check would give 95 percent confidence that you would find a disease if it were present in 25 percent of the population. A 29-head slaughter check would give 95 percent confidence from any population of 1,000 or more if 10 percent of the population were infected.

Monitoring

Maintenance of validated brucella-free and qualified pseudorabies-free herd status by quarterly sampling for serologic testing is necessary for seedstock sources. Serologic tests should also be done for diseases common in the area where the herd is located.

Feed samples should be checked at least every six months for proper mixing, particle size and the presence of the major nutrients in the amounts calculated in the ration formulations. Samples should be held back and saved from each major shipment of grain for mycotoxin testing if clinical signs indicate the need. However, because mycotoxins occur predominantly in "hot spots", routine testing for their presence probably is not necessary unless a problem is suspected.

Other diseases that can be monitored routinely include serology for TGE, Actinobacillus pleuropneumoniae, and mycoplasma hyopneumoniae. Nasal turbinates swabs can be taken and cultures done for the presence of Pasteurella multocida and Bordetella bronchiseptica.

Positive culture results must be correlated with clinical signs and slaughter lesions before specific recommendations can be made concerning the significance of the culture findings. Monitoring for lesions at slaughter has been described. Lesions observed at slaughter indicate that the organisms which cause particular lesions may be present in the herd, but do not confirm their presence. Different organisms may cause the same type of lesion in many cases.

The inherent limitations of serologic testing should be understood by producers and veterinarians. Most serologic tests do not have a level of titer response that is "black and white". Results of most serologic tests require some interpretive skills, including an awareness of the clinical signs present in the herd. In many cases it is a difficult matter to differentiate vaccine titers from titers to the "field" organism.

Feed-additives

Feed-additive growth-promotant antibiotics usually provide an advantage in the early phases of growth–up to 125 pounds. It may be useful to run on-farm trials in the finishing phase to determine the economic return on their use. The return in general is much smaller as the pigs increase in size, and may be negligible in a herd with high- health status.

There is often some concern about "masking" health problems with feed-additive antibiotics. However, if growth promotants with minimal therapeutic activity are used, these concerns should be minimized. The simplest approach for many seedstock producers is to omit feed additives in finishing so that growth performance can be evaluated based on genetic merit within the limitations of the facilities, and so that subclinical disease is not masked.

Each feed additive should be evaluated for its effect on growth and disease organisms in context of the goals of the seedstock operation and with the input of the attending veterinarian.

The following diseases, if documented in a herd, justify suspension of sales of breeding stock: pseudorabies; brucellosis, swine dysentery; PRRS — porcine reproductive and respiratory syndrome; Actinobacillus pleuropneumoniae; transmissible gastroenteritis virus (during and immediately following an outbreak); mange; and any acute infectious disease during the outbreak. Sales should be suspended at least 30 days, or until the herd can be documented as cleared of the infection.

Routine health procedures are summarized in Table 2.

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