

MU Guide

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Herd Management for Disease Prevention

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Disease control is only one facet of a successful management program. Treatment of disease is not as effective or as economical as prevention. Many outbreaks of disease in swine herds can be avoided by using management practices that include strict sanitation and immunization programs.

Biosecurity

Biosecurity is a herd management strategy designed to minimize the potential for introducing disease-causing organisms onto the farm or its buildings. People, pigs or wildlife may transport diseases from outside the herd. Trucks that have visited other operations may also carry disease organisms. All equipment and tools should be cleaned thoroughly after each use.

From a health standpoint, the herd should be located at least two miles from other pigs. If this is not possible, attention should be given to the location of the nearest swine herds, prevailing winds and the likelihood of accidental exposure to other pigs or wildlife. Domestic pets that have been exposed to other pigs are also a concern.

A perimeter chain link fence will discourage people and stray animals from entering the grounds. 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. Visitors may be required to shower and to change into clothes provided by the swine unit. Ideally, visitors should not have been present on other swine farms in the previous 24 hours.

Feed delivery and animal load-out should take place at the perimeter areas so that transportation personnel do not enter the unit. Feed bins should be located adjacent to perimeter fencing. A load-out area

should be available from the last finishing building near the perimeter fence, or pigs should be transported to the road using farm equipment, so that livestock trucks do not enter the compound.

All in/all out

Pigs should be moved as a group during each stage of production in an all-in/all-out manner. When a group is moved from any production facility, that area should be cleaned thoroughly by power washing and then disinfected. Disinfection should be attempted only after thorough cleaning. Cold temperatures and organic material reduce the effectiveness of most disinfectants. The chemical agents commonly used require several minutes in contact with disease-producing agents to be effective.

Disinfection procedures should include:

1. Removal of bedding, manure and feed.
2. Thorough cleaning with hot soapy water and/or 2 percent lye.
3. Rinsing with clear water to remove all residues.
4. Correct application of an approved disinfectant (Table 1).
5. Adequate rest periods for the area before the introduction of new animals. Consult a veterinarian for the specific recommendations applying to your situation.

Newborn pigs, weanlings, feeders and breeding animals should be kept separate. Some diseases that may cause few or no clinical signs in one group may be highly pathogenic to another group.

In general, the benefits of changing from continuous flow production to all in/all out production are:

1. 7 to 10 percent improvement in average daily gain and feed efficiency.
2. 14 to 28 day improvement in days to market.

Table 1. Common disinfectants, their characteristics and uses.

Active compound	Uses	Range of effectiveness	Disadvantages	Common brands and names
Chlorhexidine	equipment premises foot baths	Some bacteria and viruses, ineffective against parvovirus, <i>Pseudomonas</i>	Reduced activity against certain organisms	Nolvasan®
Chlorine Hypochlorites Chloramines	cleaned equipment	Bacteria and fungi, limited effect on bacterial spores and viruses	Inactivated by organic material, may be irritating	Chloramine-T®, Chlorox®, Halazone®
Cresols, Phenols	equipment premises foot baths	Variety of bacteria, limited effect on fungi and viruses, poor against bacterial spores	Strong odor with coal or wood tar distillates	Cresl-400®, Environ®, Laro®, Lysol®
Formaldehyde other Aldehydes	equipment premises foot baths	Variety of bacteria, bacterial spores, fungi and viruses	Irritating fumes	Cidex®, DC&R®, Formaldegen®, Formalin
Iodophors	cleaned equipment	Bacteria and fungi, limited effect on bacterial spores and viruses	Inactivated by organic material	Betadine®, Iofec®, Isodyn®, Losan®
Quaternary Ammonium compounds	cleaned equipment	Variety of bacteria, limited effect on bacterial spores, fungi and viruses	Inactivated by organic material, neutralized by soaps	Germex®, Zephiran®, Hi-Lethol®

*Source: *Pork Industry Handbook* publication by G. W. Meyerholz and J. Gaskin, *Extension Bulletin E-1596*.

3. 1 to 4 percent improvement in mortality during the grower to finish phase.
4. Fewer "tail-ender" pigs.

Adding replacement animals

All incoming breeding stock should be quarantined in isolation for 30 to 60 days at a minimum of 200 yards from the primary herd. Thirty days is the minimum period for adequate isolation and observation. Longer periods offer even more security. More recommendations for handling and observing new additions are outlined in MU publication G2508, *Herd Health Programs for Swine Seedstock Production*.

Routine health procedures

Because of the prevalence and impact of specific diseases, a vaccination program should be followed. Caution and routine surveillance are the primary health procedures suggested. Pig management procedures may be performed during the first three days of life. These include iron injections, tail docking, removal of needle teeth, and ear notching for identification.

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 when the pigs are weaned and to boars twice a year. Pigs

should receive Erysipelas vaccine at the time of weaning. The need for other vaccines should be determined with the aid of a practicing veterinarian.

Internal and external parasite control. All incoming replacements should receive two treatments, two weeks apart, with external and internal parasiticides. Fecal samples should be monitored from each production area on a quarterly basis to determine the presence of internal parasites. Further refinement of the deworming program is based on the results of these examinations (see MU publication G2430, *Common Internal Parasites of Swine*).

Animals in all phases of production should be observed at regular intervals for clinical signs of external parasites. Hog lice (*Haemotopinus suis*) feed on blood and cause irritation to the skin, which can lead to scratching, restlessness and reduced feed intake. The mange mites (*Sarcoptes scabiei* and *Demodex phylloides*) burrow in the skin or live in hair follicles, resulting in skin irritation that can occur with or without itching.

Baby pigs are very susceptible to lice and mites, but are sensitive to the treatment compounds. Therefore, control measures should be directed at the sows. Skin scrapings should be conducted on at least six breeding animals every six months to monitor for external parasites. Consulting with your veterinarian to select the proper control measures for your operation will reduce the risk of infestation by

these parasites (see MU publication G7020, *Controlling External Parasites of Swine*).

Slaughter checks. Slaughter checks should be conducted quarterly to examine for evidence of ascarid (worm) migration in the liver, pneumonia in the lungs, and atrophic rhinitis in the nasal turbinates. The skin, joints and intestinal and reproductive systems can also be observed during the slaughter checks. The findings of these checks can be used to refine health management procedures.

Monitoring. Blood samples should be obtained annually from breeding animals and examined for antibody titers for Pseudorabies and Brucellosis. Serologic tests should also be done for diseases that are common within the area in which 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 may be held back and saved from each major shipment of

grain for mycotoxin testing in the event that disease signs suggest possible exposure.

Monitoring for other infectious agents may be done at regular intervals. These include serology for TGE, nasal swabs and cultures for *Pasteurella* and *Bordetella bronchiseptica*.

Feed additives. Feed-additive, growth-promotant antibiotics may be used in the early phases of growth. It may be advantageous to run "on-farm" trials in the finishing phase to determine the economic return on using antibiotics during this time. In general, the return is much smaller as the pigs increase in size. Each feed additive should be evaluated for its effect on growth and disease organisms to determine which will be the most cost-effective for a given operation.

This publication does not introduce any new concepts, but is designed to reemphasize the importance of strict management practices that minimize the exposure of susceptible animals, breeding or finishing, to potential diseases.



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