



pork industry handbook

COOPERATIVE EXTENSION SERVICE • MICHIGAN STATE UNIVERSITY

Guidelines for the Development of a Swine Herd Health Calendar

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A well-managed, predetermined swine herd health plan minimizes disease by limiting exposure to specific disease organisms and by increasing herd immunity against common diseases. Producers should develop a specific program of disease prevention for their individual farm. Even a minimal program is better than no program at all. Herd management that promotes optimum growth of pigs will likely reduce susceptibility to infection and minimize dependence on subsequent drug treatment, vaccines and other costly disease control practices.

Isolation, blood testing of purchased herd replacements, and a strict sanitation and traffic control program minimize opportunities for new disease organisms to enter the herd, while systematic vaccination of sows and pigs reduces the likelihood of routine diseases that are difficult to control. A comprehensive herd health program also includes adequate nutrition, comfortable housing, excellent ventilation, and vigorous parasite control.

The following herd health program lists most of the needed vaccinations and parasite control measures. Not all the procedures are applicable, desirable or economically feasible for every farm. The list, Table 1, should serve only as a guide. Immunizing agents, anti-parasite products, feed additives and injectables are direct cost items for the producer. Producers should consult with their veterinarian, study the cost/benefit ratio of each procedure, and decide which are necessary for the individual farm. Special problems peculiar to a given farm need to be taken into consideration. Locale, type and size of operation and government regulations will influence health management decisions.

Vaccinations

As previously stated, not all vaccinations listed are required on every farm. Vaccinations to consider in breeding swine are leptospirosis, erysipelas, parvovirus, *E. coli*,

TGE, rotavirus, *Clostridium* and *Pasteurella/Bordetella* for atrophic rhinitis (AR). It is common to vaccinate breeding females (gilts) and young boars for leptospirosis, erysipelas and parvovirus at or after 6 ½ mo. of age and 3 to 4 wk. later. Boosters are given to sows at weaning and to boars every 6 mo. Combination vaccines are commonly used to accomplish these immunizations. Pseudorabies (PRV) vaccines are included in areas where PRV is a threat.

E. coli, AR, TGE, rotavirus and *Clostridium* vaccines are used in breeding females prior to farrowing if needed. For example, *E. coli* bacterins are given twice (5 to 6 wk. preparturition and 2 wk. preparturition) the first time a pregnant female is immunized. That same female receives only one vaccination 2-3 wk. preparturition before subsequent litters. *E. coli*, AR, TGE, rotavirus and *Clostridium* vaccines are best utilized after a veterinarian has determined they are necessary. For example, AR exists in almost every commercial herd to some degree. However, AR vaccination may only be necessary when increased days to market, feed efficiency loss, decreased average market weight and percentage of "poor-doers" start to cause economic loss. Excellent records are obviously important to measure such economically important performance traits. Even without obvious economic loss, feeder-pig producers may use AR vaccinations as insurance against price discrimination on possible crooked-snout feeder pigs and normal pen-mates. When AR bacterins are used in sows, pigs are usually vaccinated twice at 7 to 10 days and 3 to 4 wk. of age or once at 3 to 4 wk. of age depending on the type of vaccine. One manufacturer recommends vaccination of sows only. A slaughter check will help determine the AR status of the herd and provide insight to the effectiveness of the AR vaccination program.

TGE vaccine used without determination of need becomes extremely expensive. Conversely, TGE vaccina-

Table 1. Herd health management timetable for the swine breeding herd.

Time (age)	Vaccines and parasite control	Management and breeding
GILTS/SOWS		
6 ½ mo.	Deworm; treat for lice and mange; feed fresh manure from boars and sows. Repeat in one week. Commingle with cull sows, and initiate fenceline contact with boars. Vaccinate for lepto, erysipelas, parvovirus and PRV.	Choose gilts according to established genetic selection criteria and program. Isolate purchased gilts for 60 days. Blood sample purchased replacements for important disease(s) not already present in the herd.
7 ½ mo.	Repeat vaccinations	—
8 mo.	—	Breed on 2nd or 3rd heat period (at least two matings per service)
3 wk. post-breeding	—	Pregnancy check non-returns to heat.
9 mo.	—	Pregnancy check (35-60 days post-breeding).
6 wk. prior to farrowing	<i>Clostridium</i> toxoid	—
4-6 wk. prior to farrowing	<i>E. coli</i> bacterin, <i>Bordetella/Pasteurella</i> (AR), TGE, rotavirus, PRV. Treat for lice and mange.	—
2 wk. prior to farrowing	<i>E. coli</i> bacterin, <i>Clostridium</i> , rotavirus, TGE, AR.	—
7-10 days prior to farrowing	Treat for lice and mange and deworm.	May include feed additives to prevent constipation. Wash sows thoroughly with detergent before entering farrowing house.
Farrowing	—	Record litter and sow information. Pig environment—90-95 F Sow environment—65-70 F
3-5 wk. post-farrow	Lepto, parvovirus and erysipelas and PRV for sows. Treat for lice and mange.	Wean pigs. Provide comfort, sanitation and adequate diet.
BOARS		
4-6 mos	—	Select and bring to farm at least 60 days prior to breeding. (Boars are ready for limited use at 8 mo. of age.) Isolate purchased boars for 60 days. Blood sample for important disease not already in the herd.
1st 30 days following purchase in isolation.	Test for brucellosis, lepto, parvovirus, <i>Actinobacillus</i> , TGE and PRV. Treat for lice and mange and deworm.	Feed unmedicated feed, and observe for diarrhea, lameness, pneumonia, and ulcers.
2nd 30 days following purchase in isolation.	Vaccinate for erysipelas, lepto, and parvovirus.	Feed manure from other boars and sows. Commingle with cull gilts, and observe desire and ability to breed. Provide fenceline contact with gilts and sows to be bred.
Every 6 mo.	Revaccinate for PRV, lepto, erysipelas, and parvovirus; then deworm. Treat for lice and mange.	—
PIGS		
1 day	<i>Clostridium</i> antitoxin	—
1-3 days	Iron injection	Clip needle teeth. Dock tails. Ear notch. Castrate.
3-7 days	Vaccinate for AR, TGE.	Start oral iron fed in tray

(continued)

(continued)

Table 1. Herd health management timetable for the swine breeding herd.

Time (age)	Vaccines and parasite control	Management and breeding
10-14 days	Iron (injection or oral)	Start creep feed with oral iron mixed in.
3-4 weeks	Vaccinate for AR.	Expose to pre-starter feed. Wean.
Weaning + 10 days	Treat for lice, mange and then deworm.	
Weaning + 20 days	Vaccinate with erysipelas and <i>Actinobacillus pleuropneumoniae</i> bacterins.	—
10-12 wk.	Vaccinate for PRV and revaccinate with erysipelas and <i>Actinobacillus pleuropneumoniae</i> bacterins.	—
5-6 mo.	Correctly follow all feed medication and vaccination withdrawal times prior to slaughter.	Health check 20% or 30 hogs from a market group.

tion of sows and pigs in "chronic" TGE herds can be helpful and cost-effective. A veterinarian may recommend rotavirus or TGE vaccination of unweaned pigs if either virus is diagnosed as a cause of a chronically occurring scouring problem.

Erysipelas bacterins, if used, may be given at 7-10 wk. of age and repeated 3-4 wk. later. Use of live erysipelas vaccines in growing pigs is not advisable if vaccinated pigs are fed out near the main breeding herd (especially if breeding herd is unvaccinated for erysipelas).

If *Actinobacillus (Haemophilus) pleuropneumoniae* is causing either a farrow-to-finish herd problem or a feeder-pig-finisher potential problem, vaccination will be necessary at least twice and up to 3 times in growing-finishing pigs (about 7-10 wk., 12-14 wk. and possibly 16-17 wk.). Other vaccines to consider are *Actinobacillus parasuis* and *Streptococcus suis*. Label directions including withdrawal times should be considered before any vaccination program is finalized. Some vaccines that contain oil adjuvants advise 60 day withdrawal times.

Vaccine products vary considerably, and manufacturers' recommendations for time of administration differ. All of the various conditions could not be included in the timetable. **The producer's veterinarian should be conferred with for specific vaccination recommendations for each situation.** Also, veterinary assistance should be used to determine which species, strain or serotype should be included in the selected bacterins. Vaccinations that offer several choices include *Pasteurella*, *E. coli*, *Actinobacillus* and leptospirosis. Immunization is a complex process and many unforeseen circumstances can interfere with the planned protection against the specific disease. These include maternal antibody interference, stress at the time of vaccination, poor nutrition, inadequate or improper vaccine, and poor administration techniques.

Some farrowing operations use no vaccines yet have excellent herd performance. These herds rely on strict sanitation and herd exposure control methods, such as exposing young gilts to the adult herd at least 1 mo. prior to breeding to prevent parvovirus problems. In a well-managed herd, growing pigs may require no vaccinations.

Control of Parasites

Before proceeding with an active deworming program, fecal examinations from five pigs each at 10 to 15 wk. and

16 to 26 wk. of age and from 5 sows or boars should be made to determine the species of worms present. Slaughter health checks performed by a veterinarian can also be helpful in determining the extent of a parasite problem. The dewormer effective against the parasite(s) diagnosed should be used as recommended by the manufacturer. Frequently in slotted-floor systems, no worm eggs are found, and a dewormer is not required. The importance of fecal exams and slaughter health checks is stressed.

Records

If mange and/or lice are present, an intensive program for external parasite elimination is possible with a single or a combination of products.

Well-kept records are extremely important to the success of a herd health program. Records enable the producer and herd health team to identify problem areas in the operation and to measure the progress of the program. Farrowing records should denote the sow number, sire(s), date of farrowing, number born, number alive, number mummies, litter weight, 21-day weight and number weaned. Any abnormalities, disease problems and treatments of pigs or sows should be recorded. Using a modern computer software program to retrieve and compare data enhances the value of excellent records.

With the exception of newborn pigs, all hogs that die should be necropsied by the attending veterinarian or taken to a state diagnostic laboratory. Routine post-mortem examination, regardless of cause of death, detects chronic, slow-moving but costly diseases before they become established in a herd. Moreover, a devastating disease may be prevented by vaccination or treatment before serious losses occur.

Slaughter Checks

Routine slaughter checks of at least 20% of a production group of market-sized hogs by a veterinarian will provide considerable herd health information to the producer. The slaughter check needs to be included in the calendar to allow the producer and veterinarian to monitor the disease level in the herd and to measure the effectiveness of the swine herd health program. The veterinarians can inspect the lungs for bacterial and mycoplasmal pneu-

monia, the liver for parasite damage and the snout for evidence of atrophic rhinitis. Mange, arthritis, foot injuries and abscesses can also be detected. With the exception of the inspection fee, the producer incurs no financial loss from a slaughter check because the carcasses are processed normally.

When the producer does not have a cooperative packer nearby, 2 or 3 market hogs can be slaughtered at a local plant, and arrangements can be made with a veterinarian to inspect the slaughter. If this alternative is not practical, the lungs, liver, snout and intestines can be collected and taken to the veterinarian's office for examination.

Summary

Pork producers cannot afford to be without a swine herd health plan. Working in conjunction with their veterinarian, the producer should develop a basic disease prevention schedule. This schedule is an integral part of an overall management plan or calendar that should be developed with the help of a hog management team (producer, veterinarian, nutritionist, agricultural engineer and financial consultant) that minimizes disease and maximizes profit.

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