

Swine Handbook

Heard Health

This manual is designed to guide you through a year's project of swine production. The recommendations are basic to having healthy and successful swine for your project.

Sow Care

Many swine projects start with one or more sows or bred gilts. There are many ways to get sows or gilts to start your project.

A. Select gilts from finishing floor. These females should be selected at 5-6 months of age. They need to be kept on a limited ration (4-5 pounds per day of complete 16 percent ration) until they have had two heat periods. Moving them from the finishing area will probably stimulate them to come in heat in 4-6 days.

This is a good time to begin your health program. Each sow should receive some vaccines and medication now (before breeding):

1. Leptospirosis vaccine: L.pomona, L. icterohemorrhagiae, L. hardjo, L. canicola, L.grippotyphosa, L.bratislava (commonly called 6-way vaccine)
2. Erysipelas vaccine
3. Parvovirus vaccine
4. Ivermectin injectable removes most internal and external parasites.

(You may buy these vaccines from your veterinarian or farm supply store. If they are available in a combination to be given as one injection, it will make your job easier).

These vaccines and Ivermectin can be given at the same time in different sites behind the ear of the sow or gilt. Do not mix any vaccine and Ivermectin in the same syringe!

The volume of vaccine (1-5cc) will be stated on the label of bottle. Be sure to read the label.

B. Purchase gilts from a breeder. These will likely be about the same age and size. If from another herd, they must be isolated in a barn away from your family hogs for 7-30 days of quarantine. At the end of the isolation period, have your veterinarian draw blood from each animal. The blood should be checked for antibodies to pseudorabies, brucellosis, transmissible gastroenteritis (TGE) and pleuropneumonia. At the end of the quarantine period or when added to the herd, these animals should have the same vaccinations and medication described in section A.

The isolation period gives a chance for signs of disease to develop which were not noticed when the animals were purchased. If any signs such as coughing, diarrhea or skin changes are seen, you will want to talk to your project leader, county agent or veterinarian about them. These signs give some indication of diseases to be tested for when the blood test is taken at the end of the quarantine period.

Boar Care

A new boar, purchased from another breeder, should have the same treatment -quarantine, vaccination, medication, blood test - as newly purchased gilts.

If a herd boar is going to be used to breed your sows, he should also receive the same series of vaccines. Before beginning to mate your hogs, the boars and sows should have 1-2 weeks of fence line exposure to each other. This is to allow each to come in contact with manure and secretions of the other to build immunity to the common bacteria and viruses which each carry in their bodies. This exposure also stimulates sows and gilts to come in heat sooner and more intensely.

Health Care Before Farrowing

Hopefully, you will have seen and written down the breeding dates of each of your sows. At least you should have written down the day the sows and boar were put together to begin mating.

Feeding: Sows and gilts should be fed four pounds per day of complete 16 percent sow ration during gestation. You should increase to five pounds in the last three weeks before farrowing. It is very important to the health of the sow and her litter that she not get too fat during gestation. You can control this by limiting the amount of feed. Be sure the sow ration is designed for sows. A ration for finishing hogs will be inadequate in protein, calcium, phosphorus and the various trace minerals. Sows overfed during gestation tend to have poor appetites during suckling. Therefore, they may not give enough milk for their pigs.

Vaccinations: About five weeks before farrowing (80 days after breeding), sows should receive atrophic rhinitis vaccine and E. coli vaccine. About two weeks before farrowing, this series of vaccines should be repeated. If your sows have been kept in dirt lots or on pasture during gestation, they should be wormed with fenbendazole (Safeguard) or Atgard just before going into the farrowing house. This is also a good time to give a good cleaning with warm water and some detergent to remove filth and worm eggs which have built up on the body during gestation. If you have done all these things, your sows should be in condition to give birth to good litter of pigs.

Baby Pig/Sow Care

Farrowing: The area where the sow gives birth, whether a stall or crate, should have a hard surface and be clean and dry. Sows in open stalls are more comfortable with some bedding, such as straw or shavings.

Temperature for the sow should be 60 F, and for the newborn pigs 90 F. You will need to provide some heat for the piglets in the form of a heat lamp or other source of heat. Pigs can be protected from the sow and provided a source of heat by mounting the heat lamp in a box at the side of the farrowing crate or in the corner of the stall.

If possible, you should be present as the sow farrows. As the pigs are born, they should be dried off. The navels should be clipped to about 3-.4 inches long and dipped in iodine. While drying the pig, use a pair of side cutters to clip the "needle" teeth - two on each side, top and bottom. These are very sharp and may irritate the sow's udder as the pig nurses.

Lack of milk - pigs restless and gaunt. Sometimes the sow will not let down her milk due to fever in the udder or other reason. If pigs do not appear content, are rooting at the udder and restless 8-12 hours after farrowing, you should take sow's temperature and feel the udder. If it feels hard and hot, that indicates mastitis (an infection or congestion of the udder). A temperature greater than 103 F indicates need for treatment. The most useful treatment for this condition is an antibiotic and oxytocin, a drug which helps milk "let down." You should ask your county agent or veterinarian before hand what he/she recommends for this condition. The veterinarian can dispense this combination to you for injection when you need it, which is likely to be late at night when the veterinarian is not available.

Newborn Pig Care

1. Ear notching is required for purebred hogs. This practice should be done as well for all pigs as a way of identification and determining age. The universal ear notching system is required for purebred litters to be registered.

If your litters are not purebred, you may use the week of the year when the pig was born as a marker for pig age: 1st week of January would be No. 1 notch, last week of June would be No. 26 notch, etc. Beginning July 1, begin with No. 1 again since the previous No.1 pigs would be 6 months old and not likely to be confused. Since this process uses only one ear, the other ear could be used for some other identification, such as females being kept for replacements, etc. Draw here the ear notch(s) of one sow or pig and tell what the notching system tells you about the animal.

2. The navel cord should be dipped in a mild disinfectant such as iodine before it dries. The cord carried blood before birth. It is a good route for bacteria to invade the pig and cause disease. If extremely long (>4 inches), it may be cut off with a pocket knife to prevent dragging on the floor.

3. Injectable iron is very important because the pig is born with very small amount of iron (for making red blood cells) in its body. The sow passes very little iron to the pig through her milk. This injection should be given in the neck muscle behind the ear.

4. Vaccines and antibacterials are sometimes needed. These may be a vaccine, an antiserum against some infection such as E. coli diarrhea, or an antibiotic to control a disease, such as pneumonia. The use of these products should be determined by consulting with a veterinarian. This person will have knowledge of specific drugs and antibiotics which will be helpful in your situation. Be sure to give these in the proper place, under skin (subcutaneous) or into muscle (intramuscular). This information will be given on the label of the medicine.

5. Castration is best done between 3-7 days of age. Ask your veterinarian, 4-H leader or parent to show you how.

Suckling Period Sows normally suckle their young about every 70 minutes. You should look at the sow and litter twice each day to see whether pigs are satisfied and plump. You will want to be sure the sow has ample water through a nipple waterer or from a trough as soon as she finishes farrowing.

Some producers limit the amount of feed fed on the day of farrowing. However, you will want to feed the sow all she will eat after this time. A good rule of thumb is to feed four pounds of complete ration (sow) to maintain the sow and one pound for each live, suckling pig. So a sow with eight pigs would be fed 12 pounds of feed per day.

Some common problems of this period are:

Diarrhea - Normal bowel movement of baby pigs should be well formed and firm. If the movement is watery and thin or has a milky, mayonnaise appearance, these signs may mean diarrhea. Viral diseases such as rotavirus or TGE produce a very thin, watery diarrhea which coats the rear parts of the pig and is not easily seen though it has a putrid, disagreeable odor. Pigs with TGE may vomit, throwing up curds of milk from the stomach. The mayonnaise-appearing diarrhea is most often caused by bacteria such as E.coli or coccidiosis. An oral preparation containing gentamicin is usually good to control bacterial diarrhea in pigs. Coccidiosis is also a serious problem and requires a sulfa drug such as Trimethaprim-sulfa. This is a prescription drug and can only be dispensed by your veterinarian. It is always a good idea to ask his/her advice for treating sick pigs.

Diarrhea (scours) that does not stop with a single dose of one of the two medications listed should be investigated by a veterinarian. You should be prepared to sacrifice one or two pigs to allow your veterinarian to find the cause. Pigs to be examined (necropsied) should have shown signs of the disease for not more than two days. By choosing animals to sacrifice that have only recently begun to show signs of sickness, you are more likely to find the true cause of the problem. Pigs dead for only one to two hours may also be

necropsied, but are less useful in finding the cause of disease.

The veterinarian will probably kill the pig(s) or take a recently dead pig(s) and cut open to look for signs of disease. After examining the internal organs, the veterinarian will probably collect tissues and take to his/her laboratory for culturing and fecal examination. Usually, these tissues will be sent to a commercial or state diagnostic lab for further detection of disease. It may take several days for the veterinarian and diagnostic lab to find reasons for your pigs to be sick.

In the meantime, you can review the operation for environmental and management causes of disease.

1. Have new hogs been brought into the herd in the last six months?
2. Are there drafts in the building due to damaged curtains, broken windows, etc?
3. Do you practice all-in, all-out (farrow over a span of seven days or less, and then farrow in another building or room)?
4. Was the house cleaned with high pressure steam/hot water before sows were brought in?
5. Can you smell ammonia in the building?
6. Have you pumped the pit while sows/litters were in the building?
7. Were sows dewormed and treated for lice and mange before farrowing?
8. Did sows receive recommended vaccines before farrowing: E. coli, TGE?
9. Did baby pigs receive injectable iron in first three days of life?
10. Are floors of building or farrowing pen wet, covered with manure?
11. Did pigs suckle by 12 hours of age?
12. Are there older pigs in the farrowing house?

If you answer "Yes" to questions 1, 2, 5, 6, 10, or 12 you have some clues to the cause of the problem. "No" answers to the other questions also point to reasons for disease.

A one-week period of time before weaning is a good time to give certain vaccinations and medications such as atrophic rhinitis vaccine, pneumonia vaccine, a second iron injection, erysipelas vaccine, E. coli vaccine, rota virus and TGE virus vaccine. You probably will not need to give all of these vaccines. Depending on the history of disease in the herd, atrophic rhinitis vaccine and erysipelas should be given. Your veterinarian, county agent or volunteer leader can help

decide which are needed. You also need to be planning where the weaned pigs will be kept. They have a strong instinct to nurse at this point and will try very hard to get back to their mother. You will need to separate them with good fence and in separate buildings.

Partial weaning is the practice of taking the larger, more robust pigs away from the sow two to five days before the remainder. This allows the smaller pigs to grow more before they are weaned by getting extra milk.

Perhaps even more important, the sow will come in heat several days sooner after weaning than if all the pigs were weaned at the same time.

Weaning is the most stressful period in the pig's life. This is usually done at 3 to 5 weeks of age, but can be done as early as 10-14 days. It is extremely important that the pig have several things to keep it well during this time:

1. A pig starter containing 30 percent milk products.
2. Water always available - two nipples per pen of 20 pigs.
3. Pen or stall protected from drafts. Temperature at least five degrees warmer than the farrowing house.
4. Weaning area or nursery cleaned with high pressure steam/hot water.
5. Not more than one week span of time in ages of all pigs in building.

The younger the pigs the more comfortable and protected the pen or stall must be where the pigs are kept. If you are going to put pigs in a hut or house outdoors in winter, you will want to put some straw or other bedding in for the pigs' comfort.

After Weaning Pigs are weaned at differing ages depending on the type of nursery or housing available. Pigs weaned at an early age need a very warm, well-ventilated nursery.

In traditional hog production systems, the suckling pig is left to nurse the sow until about 6 weeks of age. After about three weeks of sow's milk, the pig begins to eat sow feed, or creep feed, if it is available. This system allows the pig's digestive system to adjust gradually to other kinds of feed which are more difficult to digest. Soybean meal and corn, the two most common ingredients in pig rations, require a different set of digestive enzymes in the pig's stomach and intestine. These enzymes require several days to develop in the pig gut. Older pigs (5-6 weeks) can do very well in less sophisticated buildings. They also will be able to digest less complex rations. When a nursery with heat and good ventilation is available, pigs can be weaned at 3 weeks of age or even earlier. At this age, pigs do not have the gut enzymes needed to digest completely corn and soybean meal. They require a ration which has a high percentage of milk and milk byproducts. A diet for pigs weighing 12-22 pounds should contain 30 percent milk and milk byproducts (skim milk powder and whey powder), 19-21 percent crude

protein, 1.3 percent lysine, 1.1 percent calcium and 0.95 percent phosphorus. Pigs weighing 22-44 pounds should receive a ration containing 5 percent whey powder, 19 percent crude protein, 1.1 percent lysine, 1.1 percent calcium and 0.95 percent phosphorus.

Medication and Feeding

It is important that newly weaned pigs receive some feed medication to control diarrhea (scours) which often occurs at weaning. Mecadox, an antibiotic to control gut infections, is the most useful product for this purpose. It is available in combination with Banminth, a drug which gets rid of roundworms and nodular worms. Other medications such as tetracycline (Aureomycin and tetracycline-sulfamethazine-penicillin (ASP) are also available in various pig starters and will give good results. These products promote efficient growth as well as control diseases in pigs.

How Much to Feed. Newly weaned pigs are used to eating at about one-hour intervals. When starting them on solid feed in the nursery, it is best to put small amounts of feed in the pig feeders three or four times daily. Pigs should clean up this feed in two to three hours. More fresh feed can be added at each visit to the nursery. Limited feed keeps the pig from overloading its stomach, which can lead to diarrhea and gut edema. Feed remaining in feeders for many hours or days becomes moldy. It does not taste good and can sicken pigs.

Any moldy feed should be cleaned out of feeders. You probably will need no more than two rations in the nursery and early grow/finish period: 1) Pigs 12-22 pounds and 2) pigs 22-44 pounds. From 44 pounds onward, pigs can do very well on 16 percent grower ration such as grow/finish hogs eat. This ration should also include an antibiotic for growth promotion at the level of 50-100 gm/ton. In special situations where there is a chronic disease such as pneumonia, atrophic rhinitis or proliferative enteritis in the herd, a specific medication prescribed by a veterinarian or recommended by the feed supplier should be added.

Pigs usually stay in the nursery for three to four weeks. By this time they should weigh 30-40 pounds and be ready to move in to the grow/finish phase of your project. You will want to look at other manuals of this swine project for information about care of pigs during this phase.

The Sow: Before and After Weaning While the sow is in a farrowing stall or confined in a building suckling pigs is an excellent time to take care of certain vaccination needs. Before weaning she should be injected with a multiple vaccine to protect against leptospirosis, parvovirus and erysipelas. In the case of parvovirus, this should be given two weeks before weaning/rebreeding.

A sow must be gaining weight for 10 days after farrowing before she can become pregnant. If five days of this positive growth occur before weaning, she will be in heat about five to six days after weaning. This is an ideal time to rebreed the

sow. You can aid in this growth by feeding all she will eat during her suckling period. After mating, the sow should receive not more than 4 1/2 pounds of feed daily. Excess feed can cause a loss of unborn pigs early in gestation. Sows kept in dirt pens and old barns need deworming/ external parasite treatment at weaning. If you used Ivermectin before farrowing, this would be a good time to spray with a topical insecticide of the permethrin family (Ectrin or Taktic). This helps get rid of external parasites: lice and mange. Also, you should treat for internal parasites using fenbendazole (Safeguard) or dichlorvos (Atgard).

Goals for 4-H Swine Project

Good health plays an important part in the success of your project. If your pigs do not reach the goals below, you may have a disease problem of some sort in your project animals. They can advise you as to how to improve the project.

Some Goals for Your Project:

Pigs born alive/litter

gilt 11

sows 12

Pigs weaned/litter

gilt 10

sow 11

Average weaning weight (lb.)

3 week 14 lb.

4 week 18 lb.

Age at market weight: 230# = 5 1/2 - 6 months

Giving Shots and Vaccine

Many health products - vaccines, antibiotics, even one wormer - are given by injection today. Plastic syringes are cheap and unbreakable. They can be sterilized by heat or by flushing in a mild disinfectant such as Chlorox. Be sure to clean and disinfect at least after each day's use. After Chlorox solution, the syringe should be flushed with tap water. Needles become contaminated with skin bacteria when injecting various drugs and vaccines. Abscesses can form when injecting with a dirty needle and hard lumps often result from using dirty needles and syringes.

Health Facts for Pigs

Respiratory rate, 20-30 per minute younger pigs 50

Pulse (heart rate, resting) 70-80 per minute

Desirable Temperature in Farrowing House or Barn

Baby pigs 4 days old to 11 lbs. 25-30 C, 77-84 F

3 weeks and older (11-40 lbs.) 27-32 C, 81-90 F

Finishing hogs (40-210 lbs.) 15-21 C, 55-64 F

Heavy hogs (200 - 250) 10-15 C, 50-59 F

Sows and boar (gestation) 15-20 C, 59-68 F

Sows (farrowing house) 15-18 C, 59-64 F

Sexual maturity male 8 months

Gestation length 112-116 days