Pig production feeding and management of the brood sow and litter

E. L. Quaife
Iowa State College

A. L. Anderson
Iowa State College

C. C. Culbertson
Iowa State College

Damon Catron
Iowa State College

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pig production

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Pig Production

Feeding and Management of the Brood Sow and Litter

Successful pork production depends first upon selection of good breeding stock. The breeding stock selected should have the inherent ability to produce and nurse a large litter that will use feed efficiently. Equally important are proper feeding and management of the brood sow and her litter.

DEVELOPING THE GILT

It is a good plan to separate the gilts from the fattening hogs at 4 to 5 months of age and feed them a growing ration. Whole oats or a mixture of one-half oats and barley or wheat coarsely ground, self-fed, constitute a good foundation for a ration. Enough corn should be fed, probably a couple of ears daily, to each gilt to keep her gaining.

One-half gallon of skimmilk daily or 1/2 pound of protein concentrate will furnish sufficient protein for one gilt in addition to what she obtains from grain and pasture. (The protein concentrate may be hand-fed or mixed with the grain on the basis of 5 pounds to each 100 pounds of grain.)

SELECT AND BREED THE WELL-GROWN GILT

Gilts should be well developed for age, and bred to farrow at 10 to 12 months of age.

Select gilts from large, uniform, well nourished litters. They should have clean-cut faces and neat, trim jowls. They should be deep in the flanks, wide through the loin, and broad and deep in the hams. Their underlines need to be long with at least six well developed teats on each side of the belly. The gilts should stand squarely on feet and legs.

By E. L. Quaife with assistance of A. L. Anderson, C. C. Culbertson and Damon Catron, all of Iowa State College.

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HEALTHY CONDITION IS ESSENTIAL AT BREEDING TIME

Gilts or sows picking up in flesh conceive more readily and stand a good chance of producing large litters. Those too fat or out of condition at breeding time may produce small and weak litters.

If the gilts are affected with the flu at breeding time, they are difficult to settle. Usually the litter from a gilt bred when she has the flu will be small and weak. She should be restored to good health before being bred.

To avoid the practice of breeding spring gilts each fall, some producers select their gilts from fall-farrowed litters. These gilts are bred the following spring to farrow their first litters the next fall. These gilts are rebred to farrow the succeeding spring’s pig crop and are then sold.

Abortion causes much loss of little pigs. Do not bring gilts or boars on the farm unless they come from Bang’s-free herds.

Isolate all new breeding stock for at least 2 weeks before allowing them to run with the rest of the herd. Worm all gilts with sodium fluoride after the ground freezes, in the fall.

THE BOAR AND THE MATING

The boar influences the type, gaining ability and size of the litter. He too must be well developed for his age. His body conformation should indicate good feeding quality. A long-legged, shallow-bodied boar is likely to sire pigs of the same type.

The boar should be obtained several weeks before needed for service. It is a good practice to try him on some market gilts to determine whether he is a breeder. The boar may be a spreader of disease, therefore check very closely on the herd he comes from, which should be Bang’s-free.

Boars are often too closely confined. They become slow and may fail to settle the sows. The boar needs, in addition to his pen, a small yard where he may exercise.

If many sows are to be bred, turn the boar with the herd for only a short time each day, or else put the individual sow in the pen with the boar. Some producers with herds
Fig. 1. It takes well developed gilts to make good brood sows.

of 30 to 40 sows use two boars, allowing each boar to run with the herd one-half day at a time.

In small herds, the boar may be allowed to run with the sows during the entire breeding season. Yearling or mature boars may breed as many as three sows a day. One service a day is better for boars under one year of age. Small litters or the failure of sows to settle may result from the use of a boar which is in a thin, run-down condition.

The same feeds as are fed the gilts may be fed to the boar, although during the breeding season he should have at least 1 pound of balanced supplement.

FEEDING DURING PREGNANCY

The pregnant gilt may well gain 1 to 1 1/2 pounds per day during the pregnancy period of 112 to 115 days. The amount the tried sow gains will depend much upon her condition at breeding time. Keep the sow from getting too fat by exercise and through the use of bulky feeds.

Gilts will need from 1 1/2 to 2 pounds of grain per hundredweight a day, while older sows may do with 1 1/4 to 1 3/4 pounds per hundredweight.

THE FEED FOR THE PREGNANT SOW

During the winter months 1 to 2 pounds of whole dry oats per sow, hand-fed, with enough corn to keep the sow in good gaining condition, forms the basis of a satisfactory
pregnant sow ration. Give sows access to a mineral mixture and all the good legume hay, such as alfalfa, red clover or soybean, she cares to eat. Feed $\frac{1}{2}$ to $\frac{3}{4}$ pound of some good balanced supplement* or $\frac{1}{2}$ gallon of skim milk to the sow each day. The supplement might be limited to the second half of the pregnancy period for tried or older sows.

Coarsely ground barley or wheat may replace part or all of the corn in the brood sow ration in localities where these grains are comparable in price with corn. Avoid the use of rye in gestation rations.

When on good pasture, the pregnant sow will need only enough grain to make a satisfactory gain. During the latter half of the pregnancy period, feed $\frac{1}{4}$ pound of supplement daily per sow.

If slopping is practiced during winter, 800 pounds ground oats, 800 pounds of ground wheat or middlings and 400 pounds balanced supplement make an excellent mixture when corn is hand-fed in addition. About 3 pounds or one-half the daily feed should be the grain in slop and the other half corn.

Self-feeding the Pregnant Sow

Pregnant sows may be self-fed with a saving of the detailed labor required in hand-feeding. The sows can eat according to their needs; more legume hay will be consumed. Self-feeding involves grinding of part or all of the feeds, and unless the ration is made bulky, the sows may become too fat.

For drylot or winter feeding, a mixture made up of $\frac{1}{3}$ ground shelled corn, $\frac{1}{3}$ ground oats and $\frac{1}{3}$ coarsely ground alfalfa with 200 pounds of a balanced supplement added to each ton of the mixture has been satisfactorily self-fed to both gilts and older sows. Minerals may be added to this mixture at the rate of 20 pounds of minerals to a ton of feed, or they may be self-fed. Ground ear corn may be substituted for the ground shelled corn for old sows.

In making up the grain and roughage mixture, different proportions can be used, depending upon the availability of various feeds and the age and condition of the sows. Some swine producers have fed up to 50 percent of the mixture

*See last page for recommended supplement and mineral mixture.
in the form of alfalfa to old sows. The supplement may be left out until the second half of the period for tried sows. Skimmilk can also be used to replace the other protein feeds.

A second procedure which does not involve grinding the corn is to use a mixture of 800 pounds ground alfalfa, 800 pounds ground oats and 400 pounds of protein feed. The ear corn can be fed separately at some distance from the sleeping quarters. The amount fed should be governed by the condition of the sows.

To make the sows exercise, the self-feeders should be set 15 to 20 rods from the sleeping quarters. The waterers should be near the sleeping quarters so the sows will drink both going to and coming from the feeder. It is very essential in self-feeding bulky dry feeds that the sows get sufficient water. The sows may be left on the self-feeder throughout the farrowing period. Sows and gilts should be fed separately; otherwise, the old sows may fight the gilts from the feeders.

On pasture, either whole oats may be self-fed or a mixture of \( \frac{2}{3} \) ground oats and \( \frac{1}{3} \) ground corn or wheat may be used, with 5 pounds of balanced supplement to each 100 pounds of grain.

MINERALS AND VITAMINS NECESSARY

Weakness of the back and the hind legs of brood sows
suckling pigs sometimes occurs when the litters are large. This trouble may be caused by mineral, protein or vitamin deficiencies in the feed, or in some cases by disease. To prevent this trouble, provide plenty of minerals in the ration. Experience shows that feeding all the alfalfa hay sows will eat helps prevent paralysis of the hindquarters. If such trouble has occurred previously on the farm, it is a good plan to force-feed minerals. The rate of 4 to 5 pounds to each 100 pounds of balanced supplement fortified with vitamin D₂ is suggested. Do not deprive the sow of minerals.

ROUGHAGE VALUABLE IN BROOD SOW RATION

Legume hays such as alfalfa, clover and soybean contain high quality protein and mineral elements such as calcium and phosphorus. They are also a good source of vitamins. Roughage distends the digestive apparatus and develops roomier brood sows. In localities where alfalfa is plentiful, it may make up 40 percent of the total feed consumed by the pregnant sow. When this much alfalfa is fed, it should be ground. Smaller amounts, such as 1/2 to 1 pound a day, may be fed in the form of hay in racks or in the nest.

BROOD SOWS FOLLOWING CATTLE

Allowing brood sows to follow cattle is a common practice but none too safe. The danger lies in sows getting bunted or kicked or in wallowing in deep mud. These hazards can be lessened some by removing the sows 3 or 4 weeks before farrowing. Even though supplement is fed to the cattle, additional grain and supplement should be fed by hand to the sows during the latter half of the pregnancy period.

EXERCISE ESSENTIAL

The best means of getting pregnant sows to exercise is by allowing them to forage in the stalk fields or in a field where corn has been hogged-down, or by scattering their feed some distance from the sleeping quarters.

FARROWING TIME

SANITATION IS IMPORTANT

The little pig should be born in clean surroundings. Pigs farrowed late in the spring or during the early fall months may well be farrowed out in the field where they have the
opportunity of avoiding exposure to infections common to old lots. Winter or early-farrowed spring pigs are usually farrowed in a central hog house, or in batteries of movable houses where there is less possibility of pigs being exposed to infectious diseases.

Scrub the pen with scalding hot water and lye (1 pound lye to 20 gallons water) and when dry, bed with clean short straw, shavings, ground corncobs or shredded fodder.

Brush or wash off dirt or filth from the belly and udders of the sow before putting her in the farrowing pen. Clean up all mange and lice by spraying sows with lindane, preferably before the sows go into winter quarters.

**CARE OF THE SOW**

Usually when milk fills the udders, the sow will farrow within 24 hours. Constipation of the sow is serious at this time. It must be guarded against by feeding laxative feeds such as whole oats or bran, or a handful of linseed meal a day or two prior to farrowing. Allow plenty of water. The sow might be shut in the pen at night and let out during the day for exercise. Sows are often confined for too long a period before farrowing. Pet the sow some or accustom her to handling so that if she needs help at farrowing time, it may be rendered without the sow becoming excited. Heavy pig losses usually result from cross or clumsy sows. Hog houses too hot or too cold cause sows to be restless. A temperature of 55° F. to 70° F. is satisfactory.

**SAVE THE PIGS**

Fifty percent of the loss of the early-farrowed pigs has usually been due to chilling at birth, or through crushing by the sow. This loss is being reduced by the use of electric brooders, heat lamps and farrowing stalls.

Guard rails made of 2x4’s or 2x6’s along the sides of the pen 8 inches from the floor and 6 inches from the wall will also cut down losses.

If heat is not provided and the temperature is such that pigs may become chilled, the pigs should be dried off and placed in a box or basket which is warmed by hot bricks or a jug of hot water. If the sow farrows during the night, the pigs had better be taken away and returned in the morning.
One strong pig may be left with the sow to keep her contented.

**FEED LIGHTLY AND CAREFULLY FOLLOWING FarrowING**

For a couple of days following farrowing, feed only whole dry oats or a little slop. If the sow is constipated and shows a tendency to feverishness, $\frac{1}{3}$ pound linseed meal or some bran added to the slop will be beneficial. Heavier feeding may be started 4 or 5 days after farrowing when most danger from fever has passed. At the end of a week or 10 days the sow should be consuming a full feed.

**RAISING ORPHAN PIGS**

1. Pigs must be kept warm. Chilling causes scours.
2. Newborn pigs should have the colostrum (first milk) of the sow or from a cow. When the colostrum is not available, half a teaspoonful of mineral oil given to each pig will help clear the bowels.
3. Cow's whole milk, plus 2 or 3 tablespoons of cream to each quart of milk—sweetened slightly by adding corn sirup and fed warm—is all that is necessary.
4. A nipple on a bottle facilitates feeding, although pigs...
may be taught to drink from a pan at an early age.
5. Utensils should be kept clean.
6. Feed six times per day during the first 3 or 4 weeks; after that three times may suffice.
7. During the first week $\frac{1}{2}$ to 1 cupful a day; the second week, 1 to $1\frac{1}{2}$ cupfuls; the third week, 1 pint; and the fourth week, 1 quart of milk a day may be satisfactory.
8. For pigs fed cow's milk and with no access to soil, add $\frac{1}{2}$ ounce of a saturated solution of copperas in water (made by dissolving a pound of copperas in $\frac{1}{2}$ gallon hot water) to each quart of milk to prevent anemia.
9. At a week to 10 days of age, offer the pigs rolled oats or coarsely ground wheat and cracked corn; at 4 to 6 weeks of age, skimmilk may be substituted for the whole milk.
10. Synthetic milks may soon be available for the raising of orphan pigs.

THE NURSING SOW

A HEAVY MILK FLOW CALLS FOR GOOD FEEDING

Self-feeding of sows nursing pigs reduces labor, stimulates milk production and helps keep the sow in good flesh. Self-feeding may be begun 10 days after farrowing, although some producers leave the sows on self-feeders all of the time.

Fig. 4. Electric brooders provide uniform, safe, satisfactory heat.
A ration of shelled corn, whole or ground oats and some good protein mixture may be self-fed separately with excellent results. Earley or wheat may replace some of the corn. One to two gallons of skimmilk or buttermilk is a good replacement for other protein feeds.

A feed mixture for slop consists of 100 pounds of ground oats and 100 pounds of middlings or ground wheat to which 50 pounds of protein feeds have been added. This mixture fed in thick slop with full-feeding of corn is satisfactory.

**WHEN SOWS DO NOT MILK**

“Drying up” or failure of the sow to produce milk often occurs. This may be due to any one of a number of factors, such as fever in the udders, overworking the sow, an inadequate diet or the lack of inherent ability to produce milk.

Fever in the udders may be caused by overfeeding at the time of farrowing or by sows lying on a cold floor. The sow is restless and refuses to let the pigs nurse. Milk congests in the udders and the sow may dry up.

A run-down condition due to overworking with previous litters may also cause sows to dry up. It is not a good practice to full-feed the sow immediately following farrowing. Therefore, she should have some reserve flesh to draw upon until she is consuming a full ration.

An inadequate diet is a frequent cause of failure to milk well. A ration made up entirely of corn is deficient for milk production. Swine producers often make the remark that their sows dry up, although they are feeding all the skimmilk or buttermilk the sows will drink. The probability is that the sow is not eating enough other feeds such as corn, oats, wheat and protein supplement which furnish dry matter out of which milk may be made. Two gallons of buttermilk or skimmilk probably represents about the maximum amount of milk which should be fed daily with grain to the brood sow.

When adequate rations for milk production have been fed and other known requirements met, and little or no milk is produced, it is probable that the pituitary gland, which is involved in milk production, is not functioning properly. This frequently occurs when the sow has been suckled down
badly. An injection of an extract from the pituitary glands is often helpful in bringing these sows to their milk.

Finally, some sows are naturally poor mothers and milkers. Swine have gone through extreme changes in type. Corn has been used heavily in the rations, and there has been a tendency to produce a "lardy" hog. Sows of this type are often failures as nurses for large litters.

FEEDING THE LITTLE PIGS

Little pigs will begin to eat grain at a week to 10 days of age. Where the sows are self-fed the pigs may be permitted to eat with their dams provided there is ample self-feeder space. Pigs at this time should not be obliged to eat much of very fibrous feeds such as whole oats, ground oats or alfalfa meal, and for that reason the sow's ration may not be satisfactory. Pigs may be encouraged to eat sooner if a creep is provided where they can go and eat a special feed apart from the sow.

Pigs take to "rolled" and hulled oats sooner than any
other feed. A shallow trough with cleats 4 inches apart across the top will prevent the pigs from getting into it and soiling the oats. It is not necessary to grind the hulled oats, although to prevent bolting it will be found helpful to mix some ground oats with the hulled oats.

Cracked wheat is also a good starting feed. After pigs are a month old, shelled corn or cracked corn may be added to the rolled oats. A protein supplement should be allowed at 4 to 5 weeks of age in addition to any grain or pig meals. The rolled or hulled oats should be removed from the ration by the time pigs are 40 to 50 pounds in weight, and they should then be on corn, ground oats and a supplement diet. (See page 831 for a good starting ration.)

The period from farrowing until weaning is the most critical period in the life of the pig, and his development at weaning time depends largely upon how well the sow milks and the supplementary feeds the pigs will eat. The ration during the critical growing period should contain all the essential proteins, vitamins and minerals. Pigs raised in confinement are more likely to have trouble than those out on pasture.

MANAGEMENT OF THE SOW AND LITTER

Caring for the individual sow and litter in the farrowing pen from farrowing until weaning presents quite a problem in labor and management. To reduce labor, many producers run three or four litters together after the pigs are 10 to 14 days of age. One pen is converted into a creep and a place for the pigs to sleep. One heat lamp at that time will care for three or four litters. The dams occupy the balance of the pens and may be fed as a unit. If the sows have access to a feeding floor, they may be fed outside, thus keeping the hog house cleaner and drier. Some producers are developing small farrowing quarters which may be kept warmer and are equipped with farrowing stalls. After sows have farrowed in these special quarters and the pens are needed for other sows, the first litter is moved into the other part of the hog house.
CARE OF THE LITTLE PIGS

Anemia often occurs in little pigs confined for two or three weeks to a pen where they receive no feed other than the milk of the sow. External symptoms are thumping of the sides, paleness of the skin, shrinking in flesh and roughness of the hair. Pigs so affected generally die within a few days. Sow’s milk is deficient in iron and copper. Apparently these minerals cannot be fed to the sow to make up for this deficiency in the milk.

A good preventive of anemia and thumps is a piece of clean, fresh sod or dirt put into the pen every few days. The pigs will “nose over” the dirt and get some of it, containing mineral matter, into their mouths and into their systems. Mixing ¼ pound finely ground copperas in 100 pounds of dirt makes it more effective.

Iron pills or tablets are being used as a preventive of anemia. One pill is administered when the pig is 3 or 4 days old. It is crushed with a pair of pliers on the back of the tongue. If pigs are to be confined for a period of a month to 6 weeks, additional pills at 2 to 3 weeks of age may be necessary.

Fig. 6. Rye provides early spring pasture for sows and pigs.
Another preparation is made by dissolving 1 pound of ferrous sulfate (copperas) and 1 ounce of copper sulfate in $\frac{1}{2}$ gallon of warm water. One-half cup of sirup may be added to relieve the brackish taste. This is best administered by use of an oil can, giving the pigs a squirt on the tongue once a week for 3 or 4 weeks depending upon the length of confinement.

Encouraging the pigs to eat protein feeds and grains out of a creep at the earliest possible date is helpful in preventing this trouble. Pigs raised out on pasture are seldom affected with anemia, for they get minerals from the green feed and from rooting about in the soil.

Scours

Ordinary scours in little pigs may be brought on by overfeeding the sow; sudden change of feed; damp, chilly, cloudy weather; filthy pen conditions; and exposure to drafts or from the pigs getting wet.

White scours are due to organisms which get into the digestive tract of the pigs from contaminated teats or feed.

Locating the cause and removing it are the first steps to take in controlling these troubles. A thoroughly cleaned and disinfected pen, with dry bedding and a floor flooded with direct sunshine, together with great care as to cleanliness of feed and utensils, are the most important factors in preventing either kind of scours. Do not force the milk flow too soon after farrowing; use only clean feeds.

Clean sod placed in the pen, a tablespoon of baking soda or dried blood meal fed in slop to the sow, are commonly used, in the belief that these materials aid in checking scours.

Sunshine and Exercise Valuable

The sooner little pigs and the sow can be put out on clean ground and in the sunshine, the greater success one will have. This may be when the pigs are a couple of days old.

If the sow must be confined to the pen, some provision should be made to exercise the pigs. This can be accomplished by letting the pigs out into the alley where they can play.
Pigs Lose Tails

Sometimes the tails of little pigs will become sore at the base and “slough” off. This is due to a bacterial condition usually associated with damp bedding and infection in the pen. A disinfected pen, clean, dry bedding and sunshine are the best preventives for this difficulty. Pigs farrowed out on pasture are seldom bothered.

Pigs Are Born Fighters

Clipping the long black teeth of little pigs when pigs are a day or so old should be done only with large litters when fighting takes place. If the operation is performed, the teeth should be clipped off rather than pulled. Swab the gums afterwards with a weak solution of tincture of iodine.

Castration of the Pigs

Pigs may be castrated any time after they are a week old. If this is done at a young age, there will be very little setback in the growth. There is some advantage in spreading the various operations such as castration, vaccination and weaning. Any two of these done at the same time may cause considerable setback in rate of gain. Vaccination with the double treatment should be done at 7 to 8 weeks of age, preferably before the pigs are weaned.

Watch Out for Robbing

Runty pigs are often the result of robbing. This occurs when large numbers of litters of uneven ages and sizes run together during the suckling period. Four or five litters of even size and age are as many as should run together. This may be impractical when large numbers of sows are kept. Some hog producers run large numbers together, but arrange to have the sows and their litters in separate pens at night.

WEANING OF PIGS

The age at which pigs are weaned depends to some extent upon whether the sow is to be rebred. If the dam is a gilt and is to be rebred while the pigs are nursing, weaning may be done when the pigs are 6 to 7 weeks old. Pigs may be left longer with old sows. If the sow is not rebred, the pigs might remain with the dam until they are 8 to 10 weeks of age.
Pigs weaned at 4 or 5 weeks of age suffer a setback when taken from the sow. Pigs when weaned should be eating corn, oats and other feeds so well that they will suffer no loss in weight when taken from the sow.

A few days prior to and following weaning, limit the ration of the sow to dry oats and water so that the milk flow is reduced and the udders will dry up without swelling and becoming caked.

Taking the larger pigs away and leaving the smaller ones with the sow may result in some udders being neglected and as a result becoming swollen, caked and ruined.

**REBREEDING THE SOW**

Sows will often take the boar the third day after farrowing. The practice of breeding this soon, however, is not to be recommended except when the litter is late in the season and it is necessary to rebreed early for a second litter. If sows are well fed and kept up in flesh, there should be no difficulty in getting them in pig 2 to 3 weeks after farrowing. Sows often may be brought into heat by shutting the pigs away from the sows a few nights in succession, during the suckling period.
SUGGESTED FEEDS

I. STARTING FEEDS FOR LITTLE PIGS—UP TO 50 LBS.

Protein Analysis Approximately 18 Percent

A. Coarse ground shelled corn 450 pounds
   Rolled oats 1,000 pounds
   50 percent meat and bone scraps or 60 percent fish meal 50 pounds
   Dried whey 50 pounds
   Soybean oilmeal 400 pounds
   Vitamin antibiotic premix* 30 pounds
   Ground limestone 20 pounds
   Steamed bone meal 30 pounds
   Iodized salt 10 pounds
   Trace minerals 4 pounds

Protein Analysis Approximately 17 Percent

B. Ground shelled corn 1,000 pounds
   Ground oats 500 pounds
   Protein supplement (35 to 40 percent) 500 pounds

C. Rolled or hulled oats 100 pounds
   Vitamin antibiotic premix* 1 pound
   Mineral mixture 1 pound

II. SUGGESTED DRYLOT PROTEIN SUPPLEMENT FOR EITHER THE PIGS OR SOWS

50 percent meat and bone scraps 400 pounds
42 percent soybean oilmeal 950 pounds
34 percent linseed oilmeal 200 pounds
17 percent alfalfa meal (dehydrated) 300 pounds
Vitamin antibiotic premix* 40 pounds
Ground limestone 60 pounds
Steamed bone meal 30 pounds
Salt (iodized) 40 pounds
Trace minerals 15 pounds

III. SUGGESTED MINERAL MIXTURE

A mixture of 40 pounds limestone, 36 pounds steamed bone meal, 20 pounds iodized salt and 4 pounds of trace minerals is recommended.

Trace mineral premixes should contain the following minor mineral elements: copper, cobalt, iron, zinc, manganese and iodine.

*Premix to carry:

- Vitamin A ........................................... 5 million units
- Vitamin Ds .......................................... 2 million units
- Vitamin B12 ........................................ 40 milligrams
- Riboflavin .......................................... 6 grams
- Niacin .............................................. 60 grams
- Calcium pantothenate ............................ 6 grams
- Choline chloride .................................. 150 grams
- Antibiotic(s) ..................................... 40 grams

Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts, Floyd Andre, director, Ames, Iowa.