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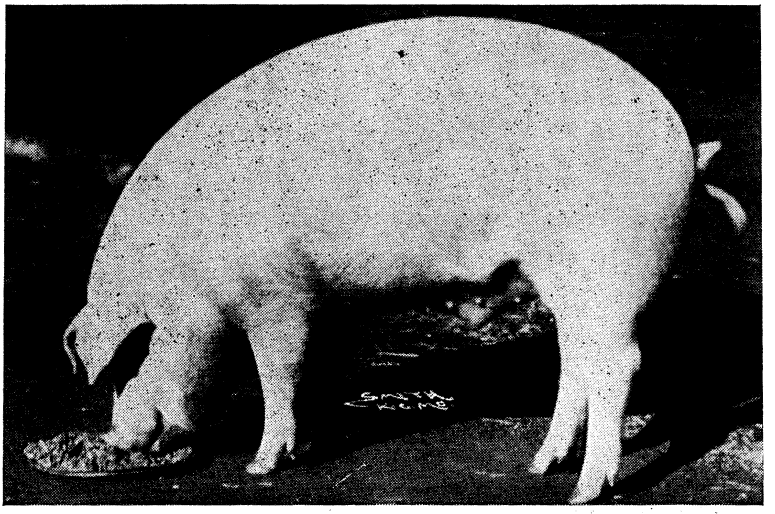

Care and Management of Swine

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF OKLAHOMA
ERNEST E. SCHOLL, Director
OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE AND UNITED STATES DEPARTMENT OF AGRICULTURE, COOPERATING
EXTENSION SERVICE
COUNTY AGENT WORK
STILLWATER, OKLAHOMA
Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914

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CARE AND MANAGEMENT OF SWINE

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The purpose of this bulletin is to discuss in a practical way the many problems that are continually confronting the farmer in the matter of feeding and caring for swine of different ages, and no attempt will be made to present scientific data.

FEED AND CARE OF THE BROOD SOW BEFORE FARROWING

Feeding Before Breeding

To secure best results in breeding sows, it is best to follow the method long practiced by the shepherd when he "flushes" his ewes. By flushing the shepherd means that before breeding his ewes he puts them on a ration that will stimulate growth. The same principle can be applied in the breeding of sows. It will be found that sows fed liberally on a good ration for a few days before the breeding season starts will come in heat more readily and are more apt to conceive from the first service than sows that are held on a maintenance ration or are losing in weight.

Feeding During Pregnancy

The thing that the farmer or breeder is most interested in is producing the largest number of good pigs from a given number of sows. The secret of success in raising large litters of pigs is largely a matter of proper care and feeding of the sow during the period of pregnancy. In order to raise a large number of pigs from each sow, it is necessary that the pigs when farrowed be strong and vigorous. To produce strong, vigorous pigs, several things must be taken into consideration in the feeding and care of the sow during this period.

Protein

To produce a strong litter of pigs some protein rich food in addition to corn or other carbonaceous grain must be fed. To get best results the ration must contain from 15 to 20 percent protein. In other words, there must be one pound of protein to every five or six pounds of carbohydrates and fats. Corn contains one pound of protein to 10 pounds of carbohydrates and fats, and other grains about the same proportion. It is readily seen, therefore, that corn alone is an unsatisfactory ration for brood sows.

Experimental results show that when corn alone is fed to brood sows, from 40 to 65 percent of the pigs farrowed will be

ACKNOWLEDGMENT

All of the drawings in this bulletin were prepared by Professor W. E. Stanford under the direction of Professor L. E. Hazen of the Department of Agricultural Engineering.

strong and 16 to 20 percent weak. Sows fed a properly balanced ration, containing a protein supplement, will farrow 85 to 90 percent strong pigs. The average weight of the pigs from corn fed sows is approximately 2.25 pounds, while the average weight from properly fed sows is approximately 2.75 pounds. It is easy to see that, with this big advantage of size and strength, a larger number of pigs can be raised from the sows receiving protein supplement in addition to corn. In addition to producing stronger and larger pigs it is cheaper to feed a properly balanced ration than it is a straight corn ration. We cannot too strongly recommend the use of protein feeds for brood sows. It is doubtful, in fact, if pigs can be profitably produced by feeding a straight grain ration to the pregnant sow.

Mineral

Mineral matter is usually found in sufficient quantities where protein supplements are used; especially is this true with animal protein, such as tankage, meat meal and milk. Alfalfa hay is also a very good source of mineral. All pasture crops are good sources of both protein and mineral. Wheat shorts, while an excellent source of protein for hogs, is low in mineral, especially calcium, the most important mineral for hogs. Wood ashes, ground limestone, bone meal or air slaked lime all furnish minerals of value. A good mineral mixture for hogs can be made by mixing equal parts of salt, bone meal, and ground limestone.

Vitamins

There are several vitamins known to science, the presence of which are necessary for normal health and development of the animal. Of these only two, A and D, are apt to be lacking or necessary in the swine ration. Fortunately vitamin A is found in abundance in all green grasses and in green colored legume hays. Vitamin D is produced in the skin of the animal by the action of sunlight and is found in all hay that has been cured in the sunlight. In the absence of vitamin A pigs will not grow satisfactorily. If vitamin D is absent in the ration or pigs are not kept in the sunlight, they will fail to utilize calcium and phosphorus, and rickets will develop.

As a guarantee that these two vitamins will be present either green pasture or a green colored, sun cured legume hay should be kept before all hogs at all times.

Amount of Feed

There is a mistaken idea among a good many hog men that it is necessary to keep the brood sow thin in flesh in order to save a large number of pigs at farrowing time. While it is a

serious mistake to have a sow loaded down with fat at this time, especially fat that has been put on with a ration of straight corn or other grain, it is almost as serious a mistake to have a sow farrow in extremely thin condition. A sow should be fed from breeding time until farrowing time on a ration that will keep her gaining in weight from one-half to one pound daily, depending upon her condition at breeding time. To do this, it will require from one to two pounds of feed daily for every 100 pounds live weight of sow, or an average of from four to six pounds of feed daily per sow, depending upon the weight and condition.

Feed a Bulky Ration

While it is not necessary it is usually advisable to supply some bulk to the brood sow ration during the period of pregnancy. As the sow is being fed a limited ration it is found that by adding some bulk she will not fatten so readily and yet be better contented than where she is fed a more highly concentrated ration.

To supply bulk, mill run, ground oats or bran can be added to the ration. Where alfalfa or other legume hays can be used, they are by far the best source of bulk. It is not necessary to have alfalfa ground and mixed with the ration as it can be fed just as satisfactorily in the form of hay, fed from racks. Pasture crops of all kinds furnish a good source of bulk for the brood sow ration.

The Ration Should Be Laxative

Constipation is one of the worst enemies of the brood sow. This is especially true during the winter months where pasture is not available. Bran, tankage, wheat shorts, alfalfa hay and pasture are all laxative feeds and for this reason, some of these should be supplied in the ration. Pasture furnishes the best laxative feed available and should be used where possible.

Exercise

It is a generally accepted fact that pregnant animals produce stronger and more vigorous offspring when they take plenty of exercise. It is especially important that the sow take plenty of exercise during the winter months. This can be done by scattering grain on the feeding floor or over the frozen dry ground, by feeding alfalfa hay in racks, by feeding considerable distance from the sleeping quarters, or in any way that will get the sow to move about considerably during the day.

Some Brood Sow Rations

The following are some rations suggested for pregnant sows that can be modified to suit the needs of the feeder.

Where grain is suggested, corn, barley, kafir, feterita, darso, or wheat can be used. If any of the grains, except corn, are used they should be ground as it adds from five to 20 percent to their feeding value. Corn gives just as good results fed shelled or in the ear as when ground; hence, it is not necessary to grind it. Tankage can be fed dry in a long trough where the sows can get their share, or it can be mixed with the wheat shorts and fed in the form of a thick slop. Wheat shorts is best fed in the form of a thick slop as it is a little gummy and the sows do not eat it readily when it is fed dry. Skim milk and buttermilk can be fed either mixed with shorts in a thick slop or fed in a trough without any preparation. Where alfalfa is suggested, any legume hay, such as clover, cowpea or soybean hay can be used, but will not give as good results as alfalfa. The alfalfa can be fed in racks. Pasture should be included in the ration where possible as it is an excellent source of protein and mineral, furnishes the bulk necessary, and is a laxative feed.

Separate the Brood Sows From the Herd

As the requirements for mature sows, fattening hogs, and immature gilts are different, it will be necessary to separate the brood sows from the fattening hogs and keep the mature brood sows and immature gilts in separate pens, if the best results are to be secured.

Rations for Mature Sows on Pasture

Ration 1—
- Pasture
- Grain

Ration 2—
- Pasture
- Grain, 3 parts
- Shorts, 2 parts

Ration 3—
- Pasture
- Grain, 12 parts
- Tankage, 1 part

Ration 4—
- Pasture
- Grain, 20 parts
- Wheat shorts, 5 parts
- Tankage, 1 part

Rations for Mature Sows not on Pasture

Ration 5—
- Grain, 8 parts
- Wheat shorts, 5 parts
- Alfalfa meal, 1 part

Ration 6—
- Grain, 29 parts
- Tankage, 3 parts
- Alfalfa meal, 3 parts

Ration 7—
- Grain, 56 parts
- Wheat shorts, 20 parts
- Tankage, 3 parts
- Alfalfa meal, 7 parts

If the wheat shorts are very fine or floury, some bran can be used to replace part of it, giving a little more bulk to the ration.

Rations for Immature Gilts on Pasture

Ration 8—
Pasture
Grain, 6 parts
Wheat shorts, 5 parts

Ration 9—
Pasture
Grain, 10 parts
Tankage, 1 part

Ration 10—
Pasture
Grain, 15 parts
Wheat shorts, 5 parts
Tankage, 1 part

Rations for Immature Gilts Without Pasture

Ration 11—
Grain, 60 parts
Wheat shorts, 40 parts
Alfalfa meal, 8 parts

Ration 12—
Grain, 60 parts
Tankage, 6 parts
Alfalfa meal, 5 parts

Ration 13—
Grain, 75 parts
Wheat shorts, 30 parts
Tankage, 5 parts
Alfalfa meal, 10 parts

It will be noticed that in all of the rations where hogs are being fed in the dry lot, alfalfa meal has been included in the ration. It is becoming more and more apparent that where hogs are fed for any considerable length of time in dry lots some leguminous hay is essential. If the alfalfa or other leguminous hay is fed in the rack, it will be just as satisfactory as when fed in the form of meal. A great many people, however, prefer to mix the meal with the grain and for that reason, alfalfa meal has been included in all dry lot rations.

Where ear corn is fed, brood sows and fattening hogs should receive one of the following feeds per head daily:

½ to ¾ pound of tankage
1½ to 2 gallons skim milk
2 to 3 pounds wheat shorts
2 pounds of a mixture of 5 parts shorts and one part tankage
1 pound of a mixture of 50 pounds tankage, 25 pounds cottonseed meal, and 25 pounds alfalfa meal

In ration 1, where a good quality alfalfa hay is used and where the pasture is luxuriant and tender, a mature sow can secure sufficient protein from these sources without the addition of commercial protein feeds. By feeding sufficient grain to produce the required gains this makes an excellent ration.

In rations 2, 5 and 11, the shorts can be fed in the form of a thick slop and the corn either fed shelled or on the ear. If any of the small grains are used, they should be ground and can be mixed with the shorts and fed in the form of a thick slop.

In rations 3, 6 and 12, the tankage can be best fed in long troughs where there is plenty of room for each sow to secure her share.

In rations 4, 7, 10 and 13, the wheat shorts and tankage can be mixed and fed in the form of a thick slop or if the grain consists of the small grains ground, it can be mixed with the shorts and tankage and the three fed in the form of a thick slop.

It will be noted that neither bran nor oats have been included in any of the rations. Unless they are needed to supply a little more bulk to the ration, it is not advisable to use either wheat bran or oats as they are both expensive feed for hogs. Oats should be 25 percent to 40 percent cheaper than corn pound for pound before it can be used economically for hogs.

Skim milk can be used to balance a ration for brood sows, if necessary, but it is usually advisable to feed skim milk to pigs and fattening hogs instead of brood sows. If it is used, however, 1 part of grain to 2 or 3 parts of milk will balance a brood sow ration.

CARE OF THE SOW AND LITTER AT FARROWING TIME

A few days before the sow is due to farrow, she should be placed in a farrowing house which has been prepared for her. If the date of breeding has been kept, as will be the case with purebred hogs, it is an easy matter to tell when the sow is due to farrow. The period of gestation is from 112 to 114 days and it is always well on the 110th day from breeding to place the sow by herself. This is necessary for two reasons; first, the sow's ration should be changed immediately before farrowing; second, it is very essential that the sow should become accustomed to her new quarters before farrowing. A great deal of trouble is experienced where sows are left in their old quarters until they have begun making preparations for farrowing and then moved to different quarters. Where breeding dates are not kept, the appearance of the sow must be used as a guide to her probable farrowing date. From two weeks to a month before farrowing, the udder develops very rapidly. A few days before farrowing, the teats become distended. Milk usually appears in the teats from 12 to 24 hours before farrowing. It is better to separate the sow from the herd a few days too soon than leave her with the herd too long.

The Farrowing Pen

The farrowing pen should not be less than 7 by 7 feet in size, and better 8 by 8 feet. A guardrail should be placed around the edge of the pen 10 to 12 inches from the floor and the same distance from the wall. Guardrails placed lower than this are sometimes a hindrance rather than a help. The purpose of the guardrail is to allow the pigs to get next to the wall without being crushed by the sow.

The second essential in the farrowing pen is a level floor. If the floor has a low place in it, or the sow has been allowed to root a hole in the center of the pen, it is almost impossible to keep the sow from laying down on the pigs. A wooden floor, or one made of tile or brick is best, but a dirt floor is satisfactory, if kept level.

The farrowing pen should be kept dry and free from draughts. Where there are cracks, especially in the north, east or west sides that allow the wind to blow through, the sow, being uncomfortable, is fretful and uneasy, constantly working over her bed trying to make her sleeping quarters more comfortable, and while doing this is lessening the number of pigs that are going to be raised, by tramping or laying on them.

Change In Ration

For at least two or three days before farrowing, most of the grain should be left out of the ration and a ration consisting largely of mill run, bran and ground oats with 1 part of tankage to 15 or 20 parts of the mixture can be used. This is a cooling, soothing laxative ration that puts the sow in excellent condition for farrowing.

A few days before placing the sow in the farrowing pen, the pen should be thoroughly cleansed of all litter and disinfected. The farrowing quarters should be thoroughly scrubbed with hot water and lye (one can of lye to 30 gallons of water) before the sow is placed in the pen. This is the only means of destroying worm eggs that might be present in the pen. A few hours after scrubbing with lye and water, the pen should be scrubbed with clean water and allowed to thoroughly dry before using. To remove worm eggs from the body, the sow should be thoroughly scrubbed with soap and water before being placed in the pen.

Signs of Approaching Farrowing

From 12 to 14 hours before the sow is going to farrow the attendant will notice that the sow is becoming restless and is spending considerable time walking about in the pen gathering up bits of straw, probably gnawing at the walls of the

pen, and showing other signs of uneasiness. The attendant should watch for signs of milk in the udder as the appearance of milk is a sure indication that the litter will likely be farrowed within from 10 to 15 hours. It will be an easy matter for the attendant at this time to look after the sow if she is tame and quiet. It may seem a trival matter to stop several times during the day to get on good terms with the brood sow, but it is time well spent, as the sow that can be readily handled before farrowing can usually be handled just as easily after farrowing, but the sow that is wild and afraid of the attendant before farrowing will be cross after farrowing. The attendant by scratching the sow on the sides and belly can soon have her so she will lie down at any time he wishes.

When it is seen that the sow is going to farrow, practically all of the bedding should be removed from the pen and enough dry chaff and straw added to keep the floor dry, but not enough to allow the sow to pile it up in a heap and make a big hole in the center. A large number of pigs are lost by mistaken kindness by giving the sow too much bedding at farrowing time.

Attention at Farrowing Time

If the weather is warm and there is no danger of the pigs chilling, it is not always necessary for the attendant to assist at farrowing time, but it is absolutely necessary if the largest possible number of pigs are to be saved for the attendant to be present when each sow farrows, regardless of the condition of the weather or the time of day or night. There are a dozen and one things that can happen at farrowing time which will cause the loss of one or more pigs that could be prevented if the attendant is on hand. There is no set rule that can be laid down to go by at such a time as all sows do not behave alike. The things to watch, however, are to prevent sows from laying on pigs, prevent pigs from straying away from the sow and getting lost, prevent pigs from chilling in cold weather, and getting the pigs started to nursing. Some successful hog men take the pigs away from the sow as fast as they are farrowed, placing them in a well bedded box and keeping them away until the sow has finished farrowing, after which all of the pigs are placed with the sow at the same time. Other just as successful hog men leave the pigs with the sow while she is farrowing, being careful not to allow her to step on or lay on them when she gets up. Some sows will lay on one side until they have farrowed the entire litter, while others will be up and down many times during the process.

A sow that has been fed too heavily on corn is more feverish and hence more restless at farrowing time than the sow that

has been properly fed. It is always a good plan, whether the weather is cold or warm, to dry the pigs with a burlap sack as soon as they arrive. If the weather is cold, it is best to place them in a box covered loosely with a sack and leave them there until they are thoroughly dry. A dry pig does not chill as easily as a damp one and it is during the process of drying that the pig is usually chilled. If the weather is extremely cold, it is sometimes advisable to place hot bricks or rocks or a jug of hot water in the box to keep the pigs warm. This is only necessary in extreme cases as ordinarily the heat from the body of the pigs, especially where there are several of them, will be sufficient to keep them warm. Never take the pigs into a warm room next to the fire as they will be less able to stand the cold when returned to the sow than if they had been warmed with their own heat.

The naval cord can be severed a few inches from the body as soon as the pig is farrowed but it is better to leave it attached for an hour or so until the blood has been absorbed, as there is much less danger of bleeding. The cord will break of its own accord if not severed.

Under farm conditions where large numbers of hogs are kept, it is best to let the litter remain with the sow after she has finished farrowing, but with purebred sows, where the litter is extremely valuable and the loss of one pig might mean the loss of a valuable herd boar or a valuable sow, it is advisable to keep the pigs from the sow for the first three or four days, until they are strong enough to take care of themselves. Where this is done, it will be necessary to put the pigs with the sow to nurse every two or three hours, day and night, for the first three or four days. This will require a great deal of time on the part of the herdsman but will save practically all of the pigs farrowed. When pigs are from four to seven days old there is very little danger of the sow laying on them.

Feed After Farrowing

There is probbaly no more critical time in the life of the pig than the first week after it is farrowed. Thousands of pigs are killed annually by over-feeding the sow at this time. The sow, having been fed lightly before farrowing and having nothing to eat for several hours during farrowing, will naturally have a ravenous appetite and the tendency will be to overfeed at this time.

A sow should have absolutely nothing to eat for from 24 to 48 hours after the litter is farrowed. If she is a heavy milking sow, it will be best not to feed her for 48 hours, but if the pigs apparently are not getting sufficient milk, it will be all

right to feed after 24 hours. There is sufficient milk secreted to take care of the pigs during this period without giving the sow additional feed. Where additional feed is given, it causes an increased flow of milk which the pigs will be unable to handle, resulting in indigestion and scouring of the pigs and possibly milk fever on the part of the sow. These conditions can both be prevented by not feeding during this period. Allow the sow, however, all the water she cares to drink. If the weather is cold, take the chill off the water and give it to her lukewarm. Water from a well is satisfactory without warming.

The first feed should consist of, and is not to exceed, one-half pound of dry oats or bran. Ground barley is also satisfactory. A single handful of feed at this time, fed dry, is sufficient. Increase this at each feeding, taking from a week to 10 days to get the sow on full feed, gradually eliminating the oats and bran and substituting in its place corn or other grain, wheat shorts and tankage. The litter should be watched at all times for signs of scouring. If symptoms of scouring appear, cut down immediately on the feed. If a litter is badly scoured give the sow a lump of copperas (about the size of the end of your finger) dissolved and placed in her feed twice daily until the scours have been checked. Lime water fed to the sow will also give good results. A litter once scoured, however, will never develop as it should and it is better to prevent the condition by not over-feeding the sow.

After a week or 10 days, the sow can be fed a thick slop if desired, changing gradually from dry feed to wet. The brood sow with her litter can be fed about the same ration that has been recommended for immature gilts before farrowing. At this time, however, feed the sow all she will eat after the pigs have reached the place where they will take all the milk produced.

Anemia In Suckling Pigs*

Anemia is a condition due to a lack of sufficient blood forming elements, such as iron and copper in the diet. It occurs in young pigs following birth due to the lack of sufficient iron and copper in the milk of the sow. At birth pigs have a normal level of hemoglobin (red coloring matter of the blood) but immediately after birth a decline begins and if the pigs do not have access to soil the hemoglobin may drop to a dangerously low level within two or three weeks. Anemic pigs usually look strong and healthy in the early stages but after the hemoglobin level has been low for from one to two weeks there is a loss of

* The discussion of anemia was prepared by Dr. W. A. Craft, formerly of the Animal Husbandry Department.

appetite, depressed growth, and quickened breathing (thumps). The first symptom of anemia in pigs is drowsiness or inactivity. As the disease advances a loss of appetite, depressed growth, and quickened breathing (thumps) become noticeable. Frequently pigs that have become very anemic die suddenly and as a rule it is the largest and best looking pig in the litter that is found dead in the yard, since the more rapid growing pigs become more anemic when there is a deficiency of the blood elements.

Precautions should be taken against the occurrence of anemia in pigs kept in floored pens for one or more weeks after farrowing. At the Oklahoma Station, where dirt floors are not used, a half-bushel of dirt placed in the pen with the sow and pigs once or twice a week has proved to be effective in preventing anemia. A second method of preventing anemia is by drenching the pigs with a solution containing iron and copper. Three ounces of iron sulfate and one-half ounce of copper sulfate dissolved in one gallon of water makes an effective drench.

If this drench is used each pig should be given a teaspoonful of the drench once a day until they are about four to six weeks of age. A third method of preventing anemia is by painting the sow's udder with a solution which contains iron and copper. To make up a solution for this purpose dissolve one-half pound of iron sulfate and one ounce of copper sulfate in one-half gallon of water, and add one-half gallon of molasses. After stirring thoroughly this may be rubbed on the sow's udder twice daily with a clean paint brush. Some prefer to add about a pint of wheat bran to this mixture. The bran and molasses form a paste which appear to stick to the sow's udder more effectively than the molasses alone. It is desirable to keep up treatment until the pigs are four to six weeks old if they are kept in floored pens. When the pigs begin to eat in a creep they get additional blood forming elements and this aids in the restoration of the hemogoblin level.

Exercise for Sow and Litter

When the pigs are 10 days or two weeks old, it is better to move them from the central hog house, if they have been so confined, to an individual house away from the barn so they will secure more exercise. If this is not possible, see that the sow and litter are turned out daily when the weather will permit. When pigs are from two weeks to two months old, they become very fat and if they do not take exercise, develop a palpitation of the heart, known as thumps. The only prevention for thumps is an abundance of exercise. If the weather is cold and the pigs refuse to leave their bed, it will be necessary to force them to take exercise, even though the weather is bad.

Make a Creep for the Pigs

When the pigs are about three weeks old they begin eating at the mother's trough. When it is noticed that the pigs have begun to show an inclination to eat, a creep should be made at one corner of the pen where the little pigs can eat by themselves without being disturbed by the mother. The pigs will do much better and make much cheaper gains at this time if fed some feed in addition to the mother's milk. The troughs in the creep should be kept absolutely clean and sanitary to prevent digestive disturbances. Place in the creep a thin slop made of sweet skim milk and wheat shorts, or a mixture of ground corn 8 parts, wheat shorts 4 parts, tankage 1 part, fed dry in a trough or self-feeder. Skim milk in one trough, and free access to shelled corn in another, will give good results. Allow the pigs all they will eat. The creep should be high enough for the pigs to pass through without rubbing their backs as this may cause low backed pigs.

Weaning the Pigs

Weaning time, while a critical time in life of the pig, is not necessarily serious. Pigs should be weaned at from 8 to 12 weeks of age at which time they should weigh from 30 to 50 pounds. Under extreme circumstances where it is necessary to wean the pigs to rebreed the sow, they might be weaned at six weeks, but it is not advisable. Where two litters of pigs are raised annually the pigs should be weaned when eight weeks old.

There are different methods employed in weaning pigs; one of which is to take one-third of the larger pigs away from the sow, allowing the other two-thirds to remain with the sow for a few days longer, then one-half of the pigs that remain, allowing the weaker pigs to remain with the sow for a week or 10 days longer than the stronger ones. This has two advantages; first, it gives the smaller pigs a chance to catch up with the larger ones; second, it helps dry up the sow with less danger from caked udder. However, from the farmer's standpoint, it is not as satisfactory as weaning all of the pigs in the litter at the same time.

A few precautions are necessary to prevent trouble at weaning time. A few days before weaning, the feed of the sow should be cut down materially and less protein feed given, as the protein feeds produce milk and it is now desired to dry the sow up. At this time oats can again be used as oats for a brood sow is not a milk producing feed and will not produce fever like a heavy feed of corn. If it can be arranged it is better to remove the sow to different quarters and allow the pigs to remain

where they have been accustomed to sleeping and eating than to remove the pigs. In this way the pigs do not miss their mother and far less difficulty will be experienced in getting the pigs started well at weaning time. Where this is not possible, provide a good place where the pigs can be placed by themselves until the sow has had plenty of time to dry up. It is usually better to keep the pigs and their mother a considerable distance apart at this time as there will be less worry on the part of both.

Care of the Sow After the Pigs are Weaned

If the sow is to be rebred for a second litter after the pigs are weaned, her ration should be gradually increased after her udder is thoroughly dried up and in from three to five days she will be in heat, ready to rebreed. If the sow is to be fattened, she can be put into a fattening pen and will make a very remarkable recovery from her loss of flesh and will soon be ready for the market. If she is to be carried over for six months before raising another litter of pigs, it will not be necessary to feed her heavily and she can be placed on good pasture with a very limited amount of grain. It is not advisable to carry a sow over in very thin condition but at the same time, she should not be allowed to become fat as it is better to feed her heavily during the period of pregancy than while she is not in pig.

FEEDING

Feeding the Pigs

Regardless of whether the pigs are to be fed for the market, kept for breeding purposes or fitted for show animals, they require a liberal amount of feed and good care for two months following weaning. After this the method of feeding will depend upon the object that the farmer or breeder has in mind. Some of the pigs will be fattened for the market immediately, others will be grown out on pasture for a few months with the idea of fattening or having them follow cattle in the fall and winter, and some will be saved for breeding purposes.

Growing Pigs for Breeding Purposes

The pigs that are to be kept for breeding purposes, whether boars or gilts, should be fed with the idea of getting the maximum of growth without getting them fat. With this in mind, the pigs should be turned on good pasture, when possible, or given a good quality of alfalfa hay. In addition to pasture or alfalfa hay, a ration consisting of two percent to three percent of their live weight in the form of grain and other concentrated feeds should be given; that is, a 100-pound shoat should receive from two to three pounds of feed daily in addition to pasture. This feed could be any of the rations recommended in the group

suitable for immature breeding gilts. The same feeding method can be applied to pigs that are to be grown out on pasture with the idea of fattening them on the new crop of corn in the fall or allowing them to follow cattle except that in this case the minimum allowance of grain might be used, whereas with breeding stock the maximum allowance would be preferable.

Fattening Hogs

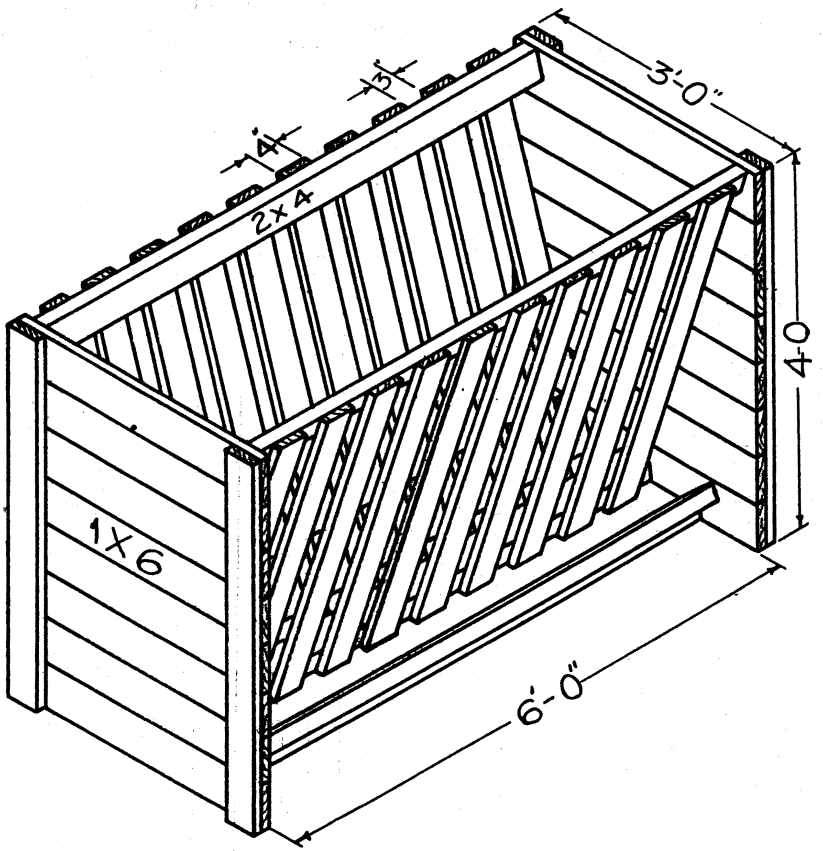
There is considerable difference of opinion in regard to the best method of fattening hogs. Some successful hog feeders maintain that it is better to force the pigs from the day they are farrowed until they are ready for the market, never allowing them to go hungry, while others maintain that it is cheaper and more profitable in the end to grow pigs on pasture with a limited amount of grain and finish them after they have developed a good frame. There are sound arguments in favor of both practices. The principal advantage of limited feeding on pasture, however, is in the cheapness of gain. Less high priced corn need be fed and a larger proportion of the new crop of corn can be used in finishing the hogs for the market. Where spring pigs are forced from the day they are farrowed until they are ready for the market, which should be from six to eight months of age, most of the gains will be put on with the crop of corn produced the year previous.

Experimental results show that there is little difference in the total amount of grain required to produce a 250-pound hog when fed by the two different methods. The hog that is forced for the market, however, has the decided advantage of being put on the market earlier in the fall and statistics show that the early fall market ranges from 50 cents to $1.00 per hundred higher in a series of years than does the winter market. This will usually more than offset any differences in the price of feed. The forced feeding has the additional advantage of getting the spring crop of pigs out of the way and leaving room to take care of the fall crop and also reduces the risk of the minimum. The main disadvantage of growing the pigs before fattening is that the large ttype hog will be too large when finished to bring the best price on the market.

Self-Feeders

There is probably no more successful way of fattening hogs than to place corn and tankage in separate compartments of a self-feeder. The hog instinctively balances his own ration better than the feeder can balance it for him. Experimental results show that where self-feeders are used, the hogs, on an average, make more rapid gains and produce one hundred pounds of gain on less feed than where the same feeds are fed

by hand. It is necessary to use some tankage in the self-feeder as hogs will not consume enough of any other protein supplement in the dry form to balance a corn ration. It is necessary to have plenty of fresh water available at all times with this method of feeding. For winter feeding, one pound of alfalfa meal can be mixed with three pounds of tankage and used as a protein supplement in the self-feeder.



View of an Alfalfa Rack

Some Rations for Fattening Hogs Weighing from 50 to 150 Pounds, In Dry Lot*

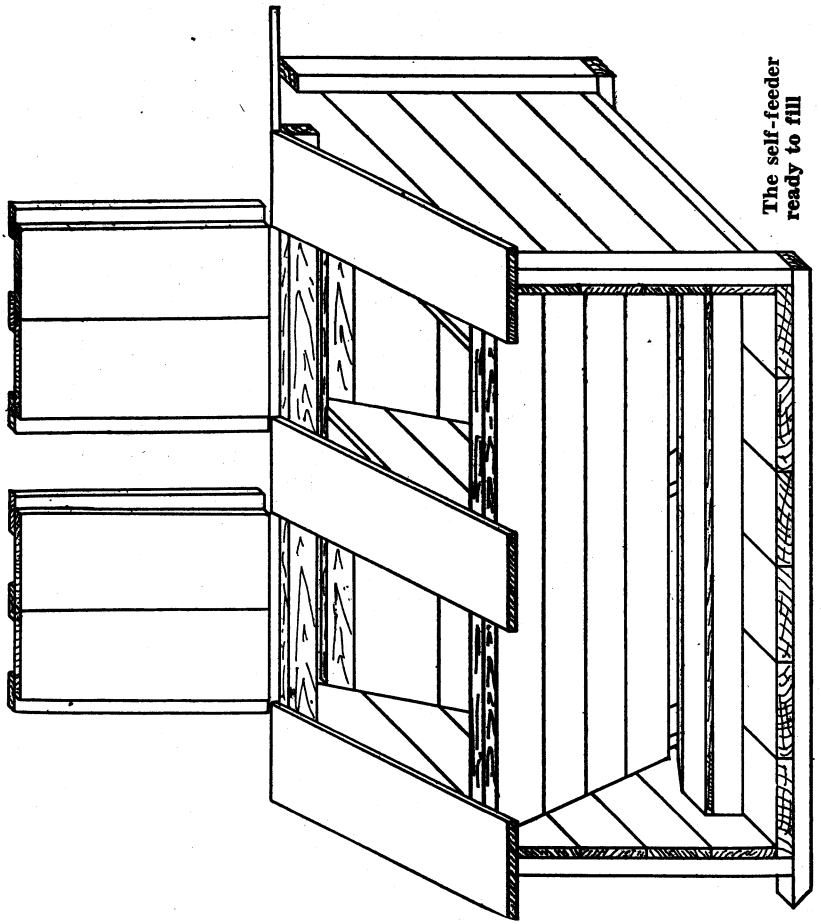
Ration 1—
- Grain 80 parts
- Tankage 9 parts
- Alfalfa meal 3 parts

Ration 2—
- Grain 1 part
- Skim milk or butter milk 3 parts

Ration 3—
- Grain 50 parts
- Wheat shorts 40 parts
- Alfalfa meal 3 parts

Ration 4—
- Grain 70 parts
- Wheat shorts 25 parts
- Tankage 5 parts
- Alfalfa meal 3 parts

* A good quality of cottonseed meal can be substituted for as much as 50 percent of the tankage with good results.



The self-feeder ready to fill

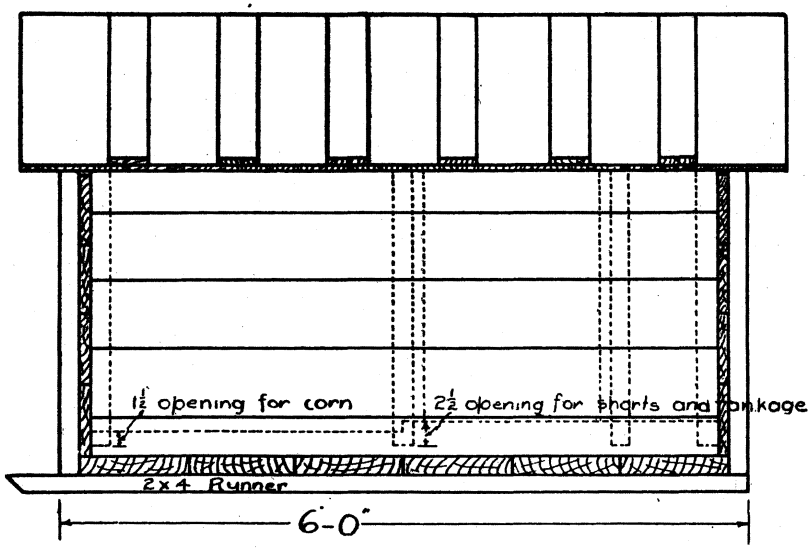
Rations for Fattening Hogs Weighing from 150 to 250 Pounds, In Dry Lot

Ration 5—
Grain 90 parts
Tankage 9 parts
Alfalfa meal 3 parts

Ration 6—
Grain 1 part
Skim milk or butter milk 2 parts

Ration 7—
Grain 40 parts
Wheat shorts 20 parts
Alfalfa meal 2 parts

Ration 8—
Grain 85 parts
Wheat shorts 25 parts
Tankage 5 parts
Alfalfa meal 3 parts



Side View of Self-Feeder

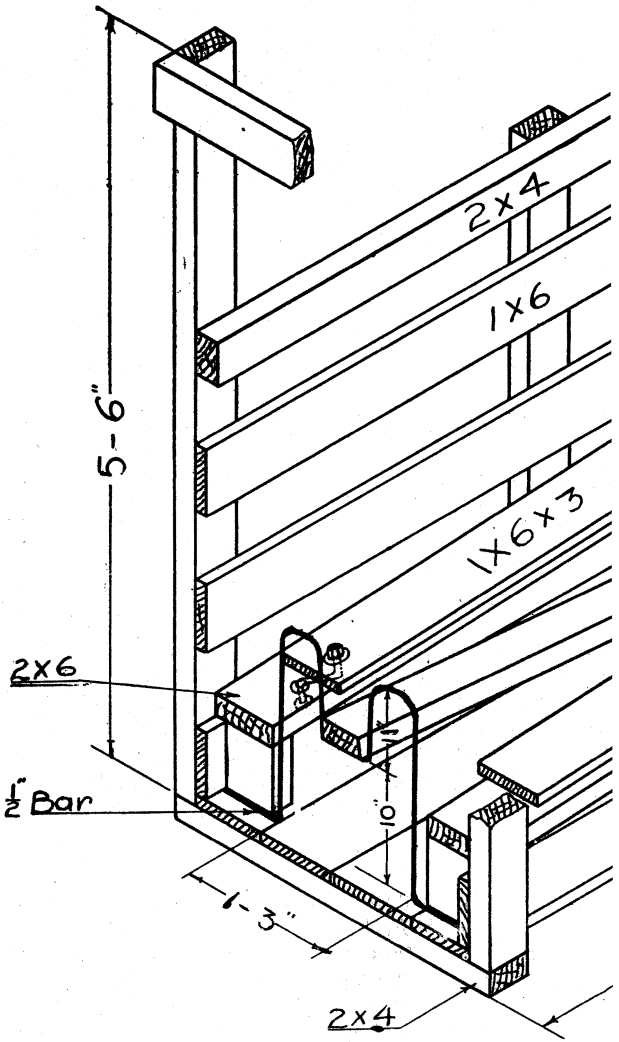
Rations for Fattening Hogs Weighing from 50 to 150 Pounds, on Pasture

Ration 9—
Pasture
Grain 10 parts
Tankage 1 part

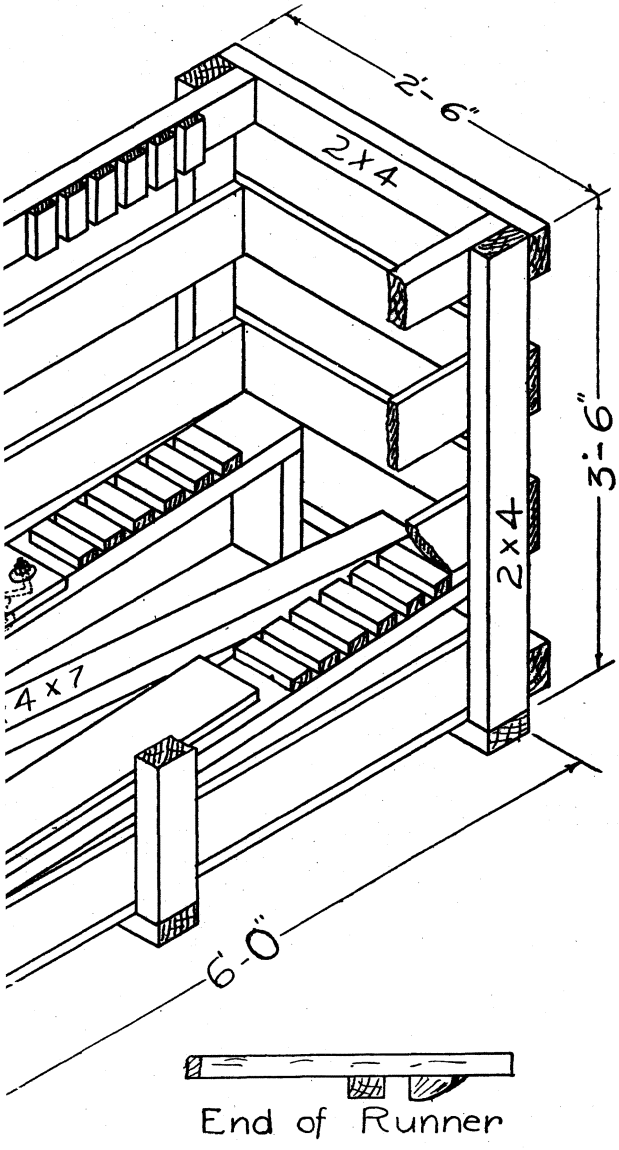
Ration 10—
Pasture
Grain 2 parts
Skim milk or butter milk 2 parts

Ration 11—
Pasture
Grain 2 parts
Wheat shorts 1 part

Ration 12—
Pasture
Grain 15 parts
Wheat shorts 5 parts
Tankage 1 part



Breeding Crate. (For



ription, see page 36.)

Rations for Fattening Hogs Weighing from 150 to 250 Pounds, on Pasture

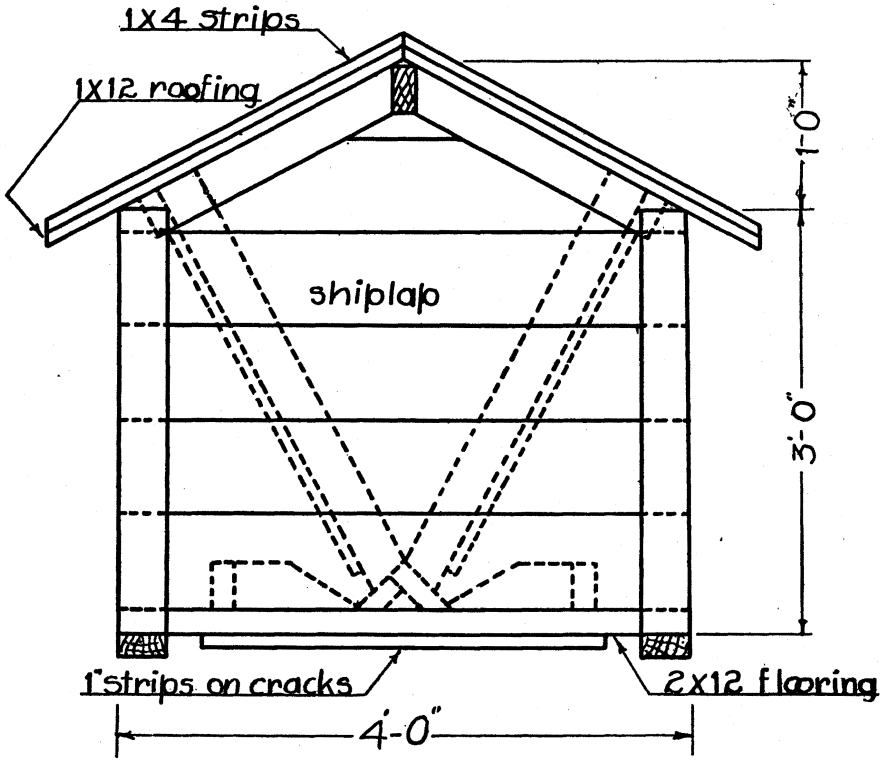
Ration 13—
Pasture
Grain 15 parts
Tankage 1 part

Ration 14—
Pasture
Grain 2 parts
Skim milk or butter milk 1 part

Ration 15—
Pasture
Grain 3 parts
Wheat shorts 1 part

Ration 16—
Pasture
Grain 20 parts
Wheat shorts 6 parts
Tankage 1 part

End View of Self-Feeder



It is always better to fatten hogs on pasture if possible as it increases the gain and decreases the concentrates required to produce a pound of gain.

Where corn is used in the ration, it can be fed shelled or in the ear and the shorts and tankage mixed and fed as a thick slop. Where any of the small grains are fed, they should be ground and can be mixed with the shorts and tankage and fed as a thick slop. If small grains cannot be ground they will give best results when fed from a self-feeder, as hogs masticate them better than when hand fed.

THE VALUE OF VARIOUS FEEDS FOR HOGS

Of the carbonaceous concentrates, wheat and corn have about the same feeding value, with wheat a slight advantage. Kafir is worth about eight percent less, pound for pound, than corn. Milo maize and feterita are very slightly less valuable than kafir, feterita being probably two percent to four percent less valuable than kafir. Barley has a feeding value slightly greater than kafir. Darso is a little less valuable than maize and the kafirs. Cane seed is not satisfactory as the sole feed for hogs but can be used in limited quantities and is worth about 40 percent less than corn by weight. Oats on account of its hull is not satisfactory for fattening hogs. It is worth 35 to 40 percent less than corn pound for pound. These values are based on ground small grain compared with whole corn.

When molasses is 10 to 15 percent cheaper per pound than corn or wheat it can be substituted for part or all of the grain in the ration for fattening hogs. It should be mixed with wheat shorts, alfalfa meal or ground grain.

Of the protein supplement, skim milk and buttermilk are the best, being rich in both protein and mineral matter. Tankage and meat meal are the best commercial protein supplements on the market, being exceedingly high in protein and mineral matter. Wheat shorts has a very valuable place in the hog ration, but is low in mineral, especially calcium, and should be fed in connection with tankage, milk or some mineral feed, especially for breeding stock. Linseed oil meal is not recommended as a protein feed for hogs due to its high price. It has about one-half the value of tankage and is usually higher in price.

Late experimental results show that cottonseed meal can be substituted for part of the tankage with good results. Where tankage is recommended in the ration, as much as one-half of the tankage can be substituted with cottonseed meal of good

quality. Where this is done, slightly more of the tankage and cotton meal should be fed than is recommended for tankage alone. Cottonseed meal has about two-thirds as much protein as tankage but it is low in mineral. It is folly to attempt to feed hogs without some protein rich feed added to the grain ration when experimental results show that the addition of a protein feed increases the rate of gain an average of 50 percent and decreases the feed required to produce a pound of pork approximately 20 percent. The protein supplement decreases the cost of gain and makes pork production more profitable.

Preparation of Feeds

Corn is best fed in the ear or shelled. All small grains, which includes everything but corn, should be ground for hogs as it increases their feeding value from 5 percent to 20 percent. Recent experimental results show that where the small grains are self fed, almost as satisfactory results are obtained as when the grains are ground and the cost is much less. Grain should never be cooked for hogs as it lowers its feeding value. Irish potatoes and field beans are the only feeds that should be cooked for hogs and cooking will increase their value from 25 percent to 50 percent. Moistening ground feed improves its palatability and is a good practice. Soaking whole small grains, such as kafir, wheat, barley, etc., lessens their value. Hogs will make more rapid gains on soaked small grains but it requires from 5 to 10 percent more grain to produce 100 pounds gain. Soaking corn adds to its palatability but does not affect in one way or the other its feeding value.

Hogging Down Corn

It is a common practice in the corn belt to turn hogs into the corn field in the fall of the year, allowing them to break down the stalks and eat the ears. This practice has its advantages as well as its disadvantages. If the forage is needed for other classes of livestock, it would not be a wise practice as the leaves and stalks would be lost by this practice. It is a profitable practice, however, where hogs weighing from 100 to 150 pounds are turned into the field, provided they are allowed to remain only when the weather is good, feeding them in dry lots during muddy weather to prevent tramping of the ground and waste of feed. It is best to remove the hogs from the field when the corn becomes scarce as hogs almost ready for the market should not be compelled to work over a large area of ground for feed. Where the field is fenced hog tight and arrangements can be made for an abundance of fresh water close at hand, this practice is commendable. Better results will be secured if pasture is available.

Pasture for Hogs

So important is pasture in pork production that it is very doubtful whether a farmer can afford to keep hogs if he cannot pasture a large part of the year.

Pasture increases the rate of gain on hogs from 30 percent to 100 percent and saves from 15 percent to 50 percent of the grain required to produce a given gain. An acre of good pasture will produce from 200 to 275 pounds of pork, where properly supplemented with grain, and will save from 500 to 1200 pounds of feed in the fattening of hogs. Pasture crops should be so arranged on the farm as to give pasture the maximum of time during the entire year.

Where alfalfa does well, there is no better pasture during the summer and early fall. For fall, winter and early spring pasture, rye, wheat and winter barley are good. For late spring pasture, oats gives good results. For summer pasture, Dwarf Essex rape, Sudan grass, cowpeas and cane are good. Possibly rape and Sudan grass are more extensively used and more satisfactory than the others for late spring and summer.

SANITATION

The Control of Worms, Lice and Mange in Hogs

Lice are so common on hogs and the results of hogs infested with this parasite are so common that it is hardly necessary to describe the symptoms resulting from lice infestation. Pigs in particular, suffer from the ravages of this parasite. A rough coat of hair, a general run-down and unthrifty condition, rubbing on fences and buildings which frequently results in abrasions of the skin, and bleeding, are all common sights where pigs are inhabited by a large number of lice. We have no direct evidence to show the actual loss from lice but it has been variously estimated at from two to seven percent. This being the case, the loss to every hog man with lousy hogs would be from 50 cents to $1 per head.

History and Habits of the Hog Louse

Hog lice live only on hogs. There is an opinion among some people that hog lice will live on humans but this is not true. Hog lice will get on humans while working with hogs but will stay only a few hours and can live only two or three days under any other environment than on the hog. The eggs, or nits, are laid by the female louse on the hair and skin, particularly around the head, just back of the ears, and on the flanks. Each female lives about one month and lays approximately 100 eggs. The eggs hatch in about two weeks and when the young lice are from 10 to 12 days old, they are fully mature and the females

start laying. It is, therefore, readily seen that the increase of the louse population is very rapid. One pair of lice placed on a hog, the first day of January, would have approximately 100,000 descendants by the first of March. The louse lives by sucking blood from the hog. For each meal, a new puncture is made in the skin of the animal, which causes the intense irritation and itching so manifest in louse-infested hogs. The loss from louse infestation is due party to the irritation and discomfort that the animal experiences, and partly to the loss of blood that is sucked from the hog. Hog lice spread from one hog to another by direct contact on the part of the hogs. Inasmuch as hog lice will live not more than three days while off the hog, pens where hogs have not been kept for several days would not be a source of infestation for clean hogs placed in such quarters.

Mange in Hogs

While mange in hogs is not as common as lousy hogs, it is more serious when present. The symptoms of mange in hogs are similar to those of lousy hogs, excepting that they are more pronounced. There is more itching and a greater amount of rubbing and scratching noticed. The coat of hair is extremely rough and patchy, being rubbed off by the constant and violent rubbing of the hogs against fences and other objects. The skin is rough and wrinkled, having somewhat a leathery appearance. The skin sometimes has a reddish yellow tinge, due to the presence of blood and serum. In advanced cases, scabs form over the body, particularly about the nose and ears. Bleeding is frequently found in advanced stages of the disease. Pigs lack in thrift and a good many of them eventually die if not treated. Packers discriminate very seriously against mangy hogs.

History and Habits of Mange

The cause of mange is a mite not over 1/50th of an inch in length and almost unnoticed by the naked eye. There are two kinds of mites that produce two different types of mange. The most common type of mange in hogs is the type known as "sarcoptes." In this type of mange, the female mite burrows into the skin where she spends her entire life. The female mite lays approximately 25 eggs at the rate of about two eggs per day. These eggs hatch out in about a week's time and in from 10 to 12 days from hatching the young mites are mature and the females have made homes of their own, by each burrowing a hole in the skin of the hog and establishing a new colony. At the point where each female has entered the skin, there is a slight swelling of the skin not larger than the head of a pin, from there may ooze a slight amount of serum. Bleeding, when it appears, is caused from the mechanical irritation

when the hog rubs and scratches. The mites live on the tissue and blood. They differ somewhat from lice, in that they will infest other classes of livestock and man. Their abode on man however, is only temporary but may last as long as 30 days and cause considerable inconvenience and discomfort.

The second type of mange, known as "demodectic," is much less common but more serious than the type just discussed. In demodectic mange, the mites live in colonies rather than in individual homes. Where these colonies exist, there are large bumps ranging in size from the head of a pin to a fair sized marble. These lumps are hard and usually occur about the nose, ears, flanks and on the inside of the hind legs. The mite that causes this type of mange is much smaller than the common mite, being about 1/100th of an inch in length and invisible to the naked eye. This form of mange, while rare, may occur in hogs, dogs, other classes of stock and man.

Treatment for Lice

Crude oil has been found to be most effective for destroying lice. Crude oil just as it comes from the well is even better than refined oil. If the oil is very heavy, enough kerosene should be added to make it pour freely. Used crank case or cylinder oil can usually be purchased very reasonably and is just as good as any other form of oil. Hog dips, such as are found on the market, will kill lice and destroy mange if enough applications are given, but they are more expensive and must be used much more frequently than oil to get the same results.

Treatment for Mange

A mixture made of one pint of kerosene and two gallons of crude oil direct from the well or of used crank case oil will kill the mange mite if applied frequently. Lime and sulphur are more effective, however, when used in the proportions of one part liquid lime and sulphur to 25 parts of water. If the lime and sulphur treatment is followed in a week with an application of crude oil, the skin and hair will regain their normal condition more readily.

How to Apply Oil

It is always best to select, particularly in the winter time, a nice warm sunshiny day for oiling hogs. After hogs are oiled, they should be given plenty of dry bedding.

The Dipping Tank

A good many authorities recommend the dipping tank as the best means of applying oil and other dips to hogs. After more than 30 years of experience, using various kinds of dipping tanks and various other methods, the writer is convinced that

the dipping tank under most circumstances is no more efficient and not as practical as other methods of applying the dip. We would not recommend that anyone go to the expense of building a dipping tank for the purpose of controlling lice or mange on hogs. After hogs have once been run through a dipping tank, it is a very difficult task to run them through a second time and a great deal of labor is required.

Spraying

The simplest and most successful way to apply oil to hogs is some form of spraying. The important thing is to get the hogs in a small enclosure where they are packed in as tightly as is conveniently possible to get them. A good spray pump can be purchased for from $5 to $6 and one man with a bucket of oil can spray the entire bunch in a few minutes. See that all the hogs are thoroughly saturated. Leave them in the pen for a few minutes until they have had time to mill around and until you are certain that every part of the body has been covered. If you do not have a spray pump, an ordinary garden sprinkler can be used, enlarging the holes somewhat with a 4-penny nail. A gallon bucket can be used, perforating the bottom with a nail and fastening a long handle to the bucket so that you can reach out over the hogs. In the absence of any of these, make a swab by attaching some rags to the end of a broomstick. It makes no difference how the oil is gotten on the hogs so long as they are thoroughly covered.

Summer Treatment for Lice and Mange

The most natural thing for a hog to do in the summertime is to get into a pool of water. Very few, if any, farms where hogs are kept, are free from hog wallows. If a scum of oil is kept on this pool, the hogs will ordinarily oil themselves when they wallow in the pool. In the absence of a natural hog wallow, artificial wallows can be made with concrete and three or four inches of water kept in these hog wallows, covered by a layer of oil and you will have no trouble from either lice or mange. In the absence of either an artificial or natural hog wallow and in winter, it will be necessary to apply the oil as described above.

Hog Oilers

There have been various kinds of hog oilers manufactured and put on the market, but none of them have proved entirely satisfactory. Hand oiling is much more efficient.

How Often Hogs Should be Oiled

In the summertime, where oil is kept in the hog wallow, it will of course not be necessary to worry further about oiling. For lice one application of oil will destroy all of the lice and most

of the nits. Usually two good oilings during the winter will be sufficient to keep lice under control. Where hogs are badly infested with mange, it may require several oilings to completely clean them up.

Hogs kept free from lice and mange are more thrifty, more free from other diseases, and will gain more rapidly, will produce their gains on less feed and will sell for a higher price when put on the market.

The Control of Round Worms

There is probably no ailment in hogs as universal as round worms. Where hogs have been raised for a number of years on the same premises, the effects of worm infestation are so common that it is generally taken for granted that such hogs will develop worms and must be treated before satisfactory gains can be made.

Symptoms of Round Worm Infestation

One of the first symptoms that would indicate to the casual observer that hogs are worm infested is the rough coat and unthrifty appearance of small pigs. They become thin in flesh, frequently are affected with a chronic diarrhea, have a hacking cough, noticed particularly when aroused from their beds, and in extreme cases have well developed symptoms of thumps. Pigs thus infected gain very slowly, if at all, and sometimes die as a direct or indirect result of the trouble. Worms not only are responsible for a more serious loss, inasmuch as other diseases, such as necrotic enteritis, develop as the indirect result of worm infestation.

Post Mortem Examination

If pigs have died and it is suspected that worms have caused the trouble, an examination will show the small intestines sometimes completely clogged with literally hundreds of worms, ranging in length from one to eight or ten inches.

Life History of Round Worms

Good thrifty pigs over four months of age are practically immune from worms. A few adult worms, however, are found in the intestines of practically all hogs. These worms are not in large numbers and do not seriously impair the health and well-being of the hog. The mature female worms in all hogs lay thousands of eggs, which are passed in the feces, and all premises where the hogs are kept are heavily infested with worm eggs. These eggs are so small that they cannot be detected with the naked eye, but a small amount of dust or dirt from any part of the hog house or corral, where hogs are kept, will show hundreds of eggs, when placed under the microscope.

After the worm egg is passed from the body of the hog, if the weather conditions are favorable, the egg incubates and the little worm devlops just the same as the chick develops in the hen eggs, the difference being that the rate of development will depend upon the moisture and temperature. Under favorable conditions, during the summer months, the embryo will develop in from eight to ten days. The embryo, once developed, will live for months, and in extreme cases, for years, waiting for the proper opportunity to hatch. This opportunity comes when the little pig by some means gets this egg into its stomach. The most common means of getting this egg, from the ground to the stomach of the little pig, is from the teats of the sow when the little pig nurses. The egg, being swallowed by the little pig while nursing, immediately hatches out in the stomach or intestines of the pig and starts to burrow its way through the walls of the intestines and into the blood stream.

For several days, the small worm is spending his time in the blood stream of the pig, getting his nourishment from the blood and developing in size. Finally as the blood, containing the small worm, passes through the lungs the worm attaches itself to the lungs where it remains anywhere from a week to 10 days. The lungs are irritated and the pig coughs a great deal and finally the worms in the mucous of the lungs are coughed up and reswallowed by the pig. The worm thus reaches the intestines, where it had hatched out from 10 days to two weeks previously. The worm has gained considerably in size during its stay in the blood and lungs. Its wanderlust seems to have subsided since it has grown older and it decides to spend the remainder of its life in the intestines of the pig where it lives and develops until it becomes a worm from eight to ten inches or more in length.

Why Worms Cause Trouble

A large number of worms in the intestines of the pig interferes mechanically with the passage of food through the intestines, sometimes clogging the intestines and causing bloat and other harmful trouble. The presence of so many worms interferes very materially with the digestion and assimilation of food and the worm utilizes a considerable amount of the food which should go to the nourishment of the pig. The little worms passing through the wall of the intestines, although they are microscopic in size, cause injury to the walls of the intestines, making an excellent place for the germ that causes necrotic enteritis to get a foothold.

Treatment

It is an old adage that, "an ounce of prevention is worth a pound of cure," but it was never more true than in the matter

of controlling worms in hogs. It is much more satisfactory and much more successful to prevent worms in pigs than it is to eliminate them after they have once gained a foothold.

It can be readily seen, by studying the life history of the round worm, that it would be hard to treat after once infested, as the worms are not all in the intestines, but there is a large number of worms in the blood stream and in the lungs which develop and enter the intestines later on, making frequent treatments necessary.

The McLean County System of Worm Control

In McLean County, Illinois, the United States Department of Agriculture, working in conjunction with the College of Agriculture of Illinois, worked out what has since been called the McLean County System of Worm Control. This system has proved to be one of the greatest steps forward in swine sanitation that has ever been developed. The basis of this system is to prevent the worms from ever getting a foothold in the herd. The system is very practical, inexpensive, and easy to operate. There are five important steps in the McLean County System of Worm Control. First, disinfect farrowing pens with boiling water, containing one can of lye to 25-30 gallons of water. It has been found experimentally that hot lye water is the only thing that will destroy worm eggs. Other dips have no effect on the hard outer coating of the egg. Be sure the water is boiling hot and then put in one can of lye to 25 or 30 gallons of water and thoroughly saturate the floor and walls of the farrowing pen. It will be taken for granted, of course, that the farrowing pen is to be cleaned of dirt, manure, straw, etc., before being disinfected.

Second, worm the sow about 7 to 10 days before she is due to farrow. This is not absolutely necessary and is not recommended by the men who had charge of the McLean County System of swine sanitation, but it is an added precaution that is well worth while. As the sow is sure to have a few adult worms in her intestines she will be constantly contaminating the clean quarters with worm eggs and if the weather is warm and the humidity right, the embryo in thes eggs will develop in a few days and the pigs may become infested before leaving the clean quarters. Consequently, it is better to rid the sow of adult worms before placing her in the clean quarters.

Third, wash the sow's sides and udder thoroughly with soap and water before putting her in the farrowing pen. This is very important because even if the sow looks clean to the naked eye, her sides and udder will have hundreds of worm eggs adhered to them. The washing is for the purpose of mechanically

removing worm eggs from the sow. While you are washing the sow's sides and udder, it is just as well to give her a complete scrubbing over the entire body using soap and a good stiff brush.

Fourth, haul the sow and litter to a clean pasture when the pigs are approximately two weeks old. It is very essential that the sow and litter should be hauled to pasture instead of driven, as the pigs will pick up many worm eggs in the dust and also many eggs will accumulate on the sides and udder of the sow, if they are allowed to walk over infested ground. The house in which the sow and litter sleep while on pasture should be thoroughly disinfected with hot lye water, the same as the farrowing pen. It is best if a movable house can be used so that all ground where the house has been standing can be plowed. Ground that is plowed and planted to winter pasture in the fall and not used for hogs to run on during the winter, will make an excellent place for spring farrowed pigs. If such is not available, the ground could be plowed during the winter and planted to spring pasture for the spring litter of pigs. The main thing is to put the sow and litter on pasture that has been plowed since other hogs have been allowed to run on it.

The pigs should be kept in the clean pasture until they are at least four months of age, after which if they have been properly fed and grown and are in good thrifty condition, they will be more or less immune to worms and can be turned on permanent pastures. If these rules are carfully followed, pigs will go onto permanent pastures practically, if not entirely, free from worms and will make very satisfactory gains from that time on.

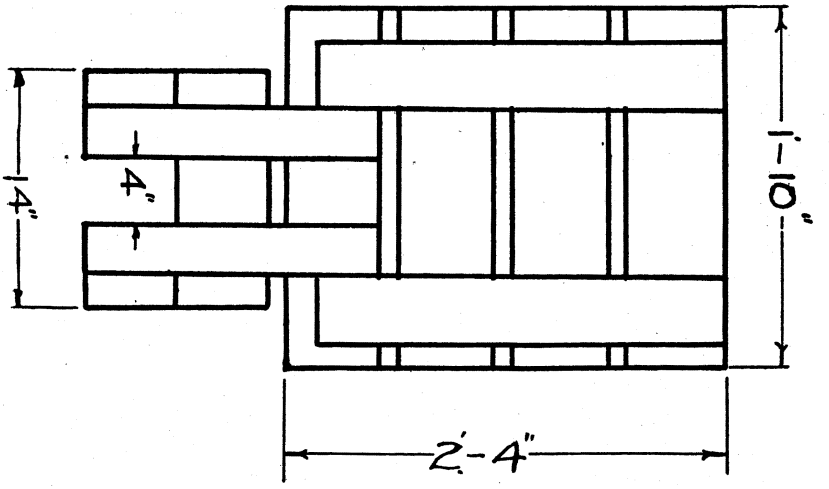
Some of the largest raisers of hogs in Oklahoma are following the McLean County System of worm control and are pronouncing it, not only satisfactory, but exceedingly practical. Reports from several hundred farmers in the United States show that where the McLean County System of sanitation is used, 30 percent more pigs are raised than under the old system. It has been estimated by men who have studied the system, after observing and talking with swine breeders throughout the country who are using the plan, that from one and a half to two more pigs can be raised per litter, at a saving of $1 or more per hundred in the cost of producing pork. The system eliminates runts and insures good thrifty pigs.

Treatment for Worms

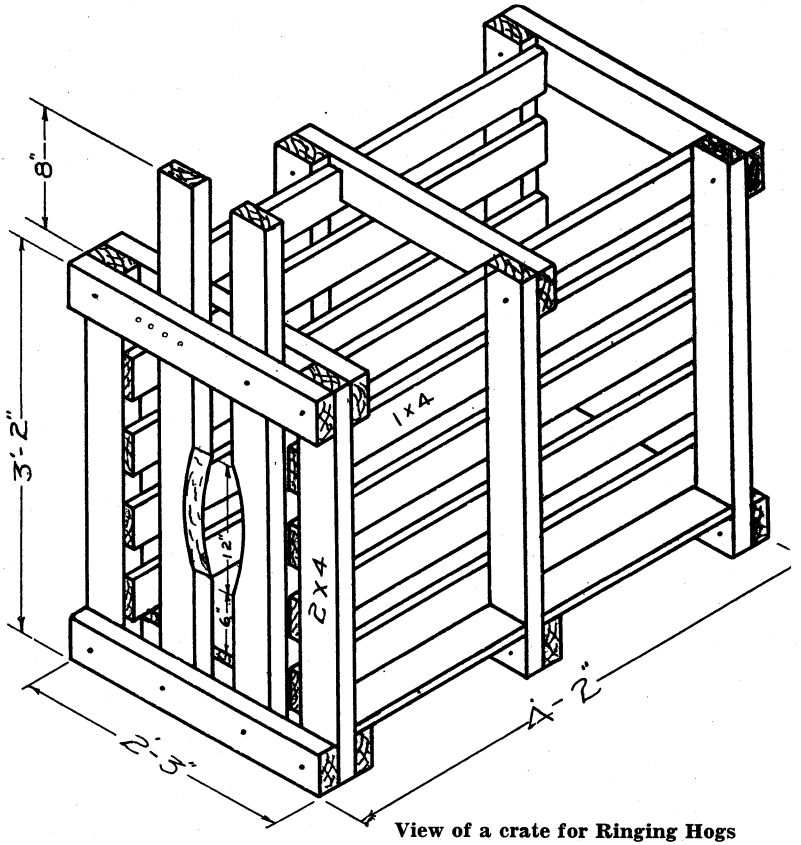
Where the McLean County System of worm control has not been used and pigs are suspected of being wormy, they should be given treatment. Only the worms that are in the intestines can be reached by medical treatment. Practically all veterinar-

ians and drug stores handle worm medicine for hogs. These are put up in capsule form, enough in one capsule to treat one pig. To give the individual treatment, it is necessary to have an instrument for holding the pig's mouth open, a pair of long forceps for depositing the capsule well back on the tongue of the pig and a syringe with which to squirt a little water over the tongue of the pig, to cause it to swallow. The individual treatment is the most satisfactory and really is not a great deal of trouble.

Most farmers prefer, however, to use a treatment that can be administered to the entire herd at one time. For this purpose, oil of chenopodium has been found most satisfactory. Mix one ounce of the oil of chenopodium with 16 ounces of castor oil. Raw linseed oil can be used instead of castor oil if desired. This is enough for eight pigs. Mix this dose with about one-half ration of thick slop, preferably mixed with milk, and place it in troughs where there is ample room for all pigs to get to the trough at the same time. This should be given after the pigs have been off feed for 12 to 24 hours so that they are very hungry. Better consumption of this mixture will be secured if bran or ground oats is scattered over the top of the trough before the pigs are turned to it. The oil of chenopodium is not appetizing to the pig and unless he is exceedingly hungry and the medicine disguised in some way, it is a little difficult to get him to consume enough to get results. If the



Sliding Door for Shortening Breeding Pen



View of a crate for Ringing Hogs

pigs do not appear to be doing as well as they should, this treatment should be followed in about two weeks by a similar treatment.

While treating hogs for worms will prove of considerable value, it is far better to adopt the McLean County System of worm control and keep the pigs free from worms at all times.

Mineral Mixtures

Hogs that have access to good pasture, legume hay, tankage or milk may not require mineral in addition. If these feeds are not available, however, one of the following mineral mixtures should be kept before the hogs at all times:

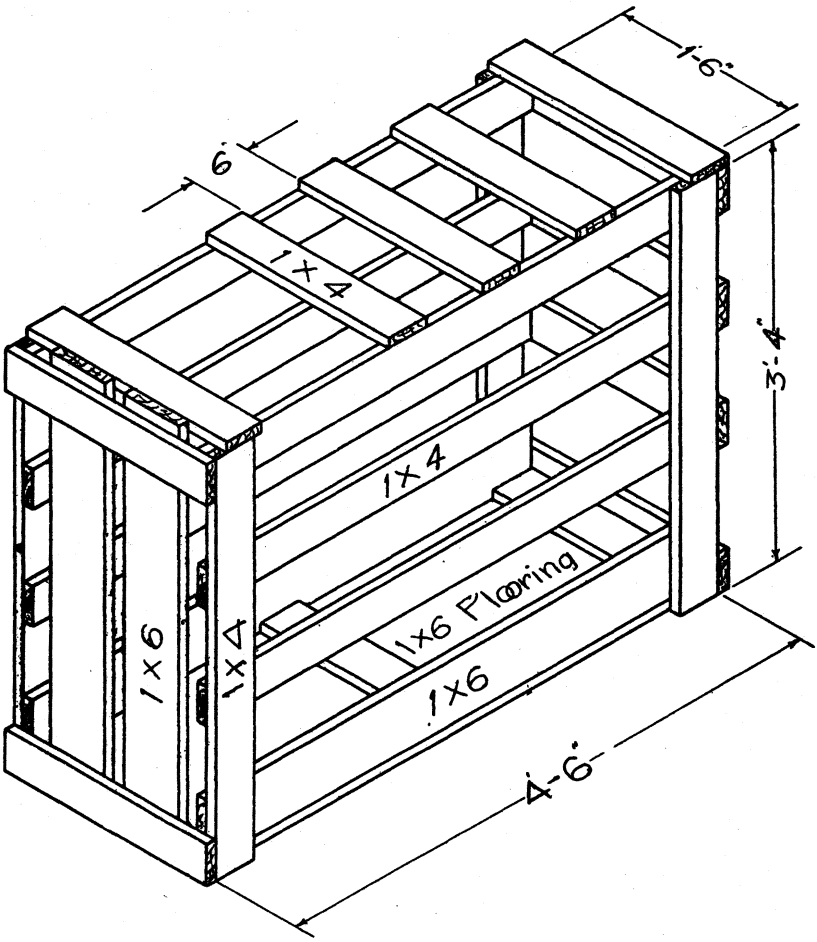
No. 1—
Wood ashes 3 parts
Salt I part

No. 2—
Air slacked lime 2 parts
Salt I part

No. 3—
Bone meal 2 parts
Salt I part

No. 4—
Ground limestone 2 parts
Salt I part

No. 5—
Salt 1 part
Bone meal 1 part
Ground limestone 1 part



Shipping Crate

Any of the above minerals can be mixed if desired. Charcoal is relished by hogs and can be added to any of the above mixtures.

Condimental Stock Powders

Condimental stock foods and condition powders are of doubtful value. Experimental results show that no value is added to a feed by such powders. A well balanced ration and a simple mineral mixture will give just as good results as high priced mixtures and stock foods.

BREEDING AND KEEPING RECORDS

For the man in the purebred business, it will be necessary to keep accurate records of his breeding dates, number of pigs farrowed, pigs of each sex, etc. For farmers raising hogs for the market, however, the only records necessary to keep are the breeding dates.

If it is not possible to breed each sow separately, the date when the boar is turned with the sows at the beginning of the breeding season should at least be kept so that the beginning of the farrowing season will be known. By adding 112 days from the day the first sow is bred, the farmer will know almost exactly the date he can expect his first litter of pigs. Under average farm conditions, it is possibly more practical to turn the boar with the sows during the breeding season than it is to keep the boar up and breed the sows one at a time. This is entirely satisfactory where not more than 12 to 15 sows are kept for one boar. Where more than that are to breed, it will be better to hand breed, allowing the boar but two services daily. Boars should not be used for service before they are eight to ten months old and better if they are one year old. Sows can be bred, if well grown, at the same age.

For plan of breeding crate see double page illustration, pages 20 and 21.

RINGING

Hogs on pasture are apt to destroy the stand of grass unless rings are placed in their noses. Placing rings in a hog's nose does not appear to affect his growth in any way, and it is possibly the best means of preventing rooting. Where a hog roots excessively, he is usually not getting enough protein and mineral matter in his ration.

SIZE OF SHIPPING CRATE TO BUILD

Weight of Hog	Length of Crate (in inches)	Width of Crate (in inches)	Height of Crate (in inches)
25 to 75	35	12	23
75 to 150	46	16	28
150 to 250	54	18	34
250 to 350	60	20	36
350 to 500	64	24	40
500 to 800	80	30	48
800 to 1000	84	30	50

CLIPPING TEETH

Occasionally little pigs fight badly, thereby lacerating each other's gums and lips, or injuring the teats and udder of the sow. When this occurs the sharp "needle" teeth, four on each side, should be clipped off, using side cutting nippers made for the purpose. Great care should be taken not to cut the gums or infection might set in. Some breeders clip these teeth on all the pigs as soon as they are farrowed.

PREPARING THE HOGS FOR THE SHOW

Three things are essential in making a satisfactory showing: first, the securing of the right kind of an animal; second, proper feeding and fitting of the animal for the show; third, proper presentation of the animal before the judge in the show ring.

Two months before the show, if the pig's hoofs are very long, they should be trimmed, trimming always from the under side and keeping them level. The feet can be trimmed until they bleed and it will not hurt the animal. After a month or six weeks, the feet may again be trimmed, but do not trim too close at this time as the animal may be lame when shown. It always improves the appearance of the hog in the show ring to trim the hair from both out and inside the ears and from the brush of the tail up to the body. This gives the hog a neater and trimmer appearance. Clippers or shears can be used for this purpose.

Before the hog goes into the show ring, a very light dressing of oil should be applied. Some light oil such as paraffin or cottonseed should be used. It is just as much a mistake to take the hog into the ring saturated with oil as it is to use no oil at all. A little oil on a brush well worked into the hair will give it a glossy appearance. A few days before the hog is to be shown, it should be scrubbed with soap and water to remove all scurf and dirt.

SHOWING THE HOG

There are a very few showmen who present their hogs in the show ring to the best advantage. There are some who are indifferent and do not present their hogs to the judge in the best possible manner, and others who are over zealous and make just as serious mistake by over-showing their hogs. There is nothing more disgusting to a judge than to have some so-called showman drive the hog under his feet, pointing out with his hands or cane the supposed good points of his hog, and calling his attention to the judge. Such a practice on the part of the showman does a great deal more harm than good and will lessen the chances of winning. The business of the showman is to keep the hog looking just as natural as possible which is usually done by keeping the hog moving slowly but not on a run. Never allow the hog to back up in a corner, stand with its legs crooked, down on its feet, or low in the back. Always keep your eye on the hog, keeping it looking its best all of the time, and do not watch the judge or talk to some of the bystanders. If you do not happen to agree with the way the judge places your hog, do not criticize his judgment to other people while the judging is going on. If you have any reasons to doubt his judgment or do not see the fairness of his decision, wait until the show is over and he will be glad to explain his placings.

Be a good winner. It takes as good an exhibitor to be a good winner as it does to be a good loser. It is very unbecoming and undignified for an exhibitor to become unduly elated over his winnings and to do too much boasting. He gains only the ill will of his fellow breeders by so doing.

JUDGING BREEDING HOGS

No attempt will be made in this bulletin to give a lengthy discussion on the judging of hogs, but a brief description might be of assistance, keeping a few of the fundamentals in mind rather than trying to master a lot of unessential details.

The important things to keep in mind in judging breeding hogs are: (1) Type—by type we mean that the hog should be long, high, deep-sided and have a wide loin and deep plump ham. (2) Legs and Feet—the ideal hog must have straight legs, moderate in length, heavy bone, short pasterns and stand straight on its feet. (3) Back—the back should be strong and symmetrically arched from front to rear. Depressions back of the shoulders and short rumps are very objectionable. (4) Smoothness and quality—the hog as viewed from the top should be even from end to end, being no wider over the

shoulders than over loin, ribs and rump, and should be free from depressions immediately back of the shoulders and creases and wrinkles in the sides, shoulders and hams.

In addition to these four essential points, it is of course desirable that he have a clean-cut head, reasonably broad between the eyes, a nice coat of hair and nice ears, not too heavy. If you have the things indicated in the first four points, it will not be necessary to worry about the others. Swirls on the back are usually considered disualifications.

JUDGING FAT HOGS

In judging fat hogs, the more important things to take into consideration are: (1) Condition—A fat hog must be fat to qualify for that class. No matter how good a type, how much quality, or how well it stands on its feet, if it isn't fat, it cannot be placed very high in a fat class. (2) Quality and Smoothness—Quality and smoothness are more important in fat hogs than in breeding hogs. The critical judge of fat barrows insists on neat smooth, trim shoulders, sides and ham. (3) Dressing Percent—The barrow when killed should dress out a large percent of meat, so anything that detracts from the dressing percent is undesirable. Barrows that are paunchy, flabby and soft will dress out lower percent than the trimmer, neater, firmer barrow and are, therefore, less desirable. (4) Type—It is necessary to have the barrow of the correct type but the extreme length and height is not emphasized as much in fat barrows as in breeding stock and a little more thickness is desired. The difference is brought about by the difference in the way they have been fitted. The back should be well arched the same as in breeding stock. Whereas, bone and feet are of paramount importance in breeding stock, they are of less importance in fat barrows. Of course a barrow that has good feet and legs will handle himself better and show up better in the show ring than one with poor feet and legs, but they are not a disqualification as in breeding stock.

CASTRATION OF BOAR PIGS*

Age of Castration

Boars should not be castrated just at weaning time or at the time when they are vaccinated for hog cholera. The pigs should be castrated about two weeks after weaning or at eight or ten weeks of age. They can be very satisfactorily castrated 10 days or two weeks before weaning.

* The article on castrating pigs was prepared by Dr. Harry W. Orr of the Veterinary Department.

Preparation for Castration

The pigs should be clean and dry for best results. Have them closely confined in clean, dry quarters. This makes it easier to handle them and the castration can go on much more rapidly. Pigs should not be fed within six hours of the time they are to be castrated.

Method of Restraint

The pigs can be held most easily in a trough. The trough should be elevated so that the person holding the pig can straddle it easily. The pig is placed in the trough back down with the buttocks near the end. The person holding the pig should straddle the animal, holding the front legs down by sitting on them with just enough pressure to secure the pig. He can then grasp the pig by the hind legs and pull them slightly forward.

Method of Castration

The materials necessary are: a good sharp knife, a two percent solution of cresol compound in a clean pan, absorbent cotton, or clean white cloth. The knife should be clean and dipped into the disinfectant before using. The operator's hands should be thoroughly washed with soap and water and rinsed in the disinfectant. Wash the scrotum with disinfectant solution using a clean white cloth or absorbent cotton.

The incision should be made well forward on the scrotum so that when the pig is standing on its feet the incision will be at the bottom of the scrotum and insure good drainage. Make the incisions straight and clean and of good size. (Many operators make their incisions too small and too high for proper drainage). Peel out the testicles and cord as far as possible, taking as much of the tunic (the thin white membrane which surrounds the testicle and cord) as can be removed. The cord can now be severed by pulling slowly and firmly upward and backward or it may be scraped through with a knife. Do not cut the cord, as severe and sometimes fatal hemorrage will result.

After Care

After castration the pig should be kept in a clean, dry lot or pasture for a few days. When the wounds are not irritated by filth and mud they heal rapidly. Do not give the pigs access to a wallow until the wounds have healed.