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Swine Production Guide for South Dakota 4-H Club Members

L.J. Kortan

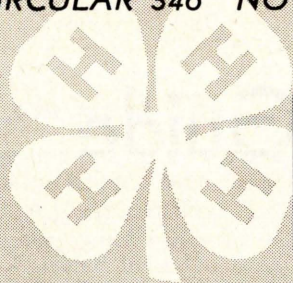
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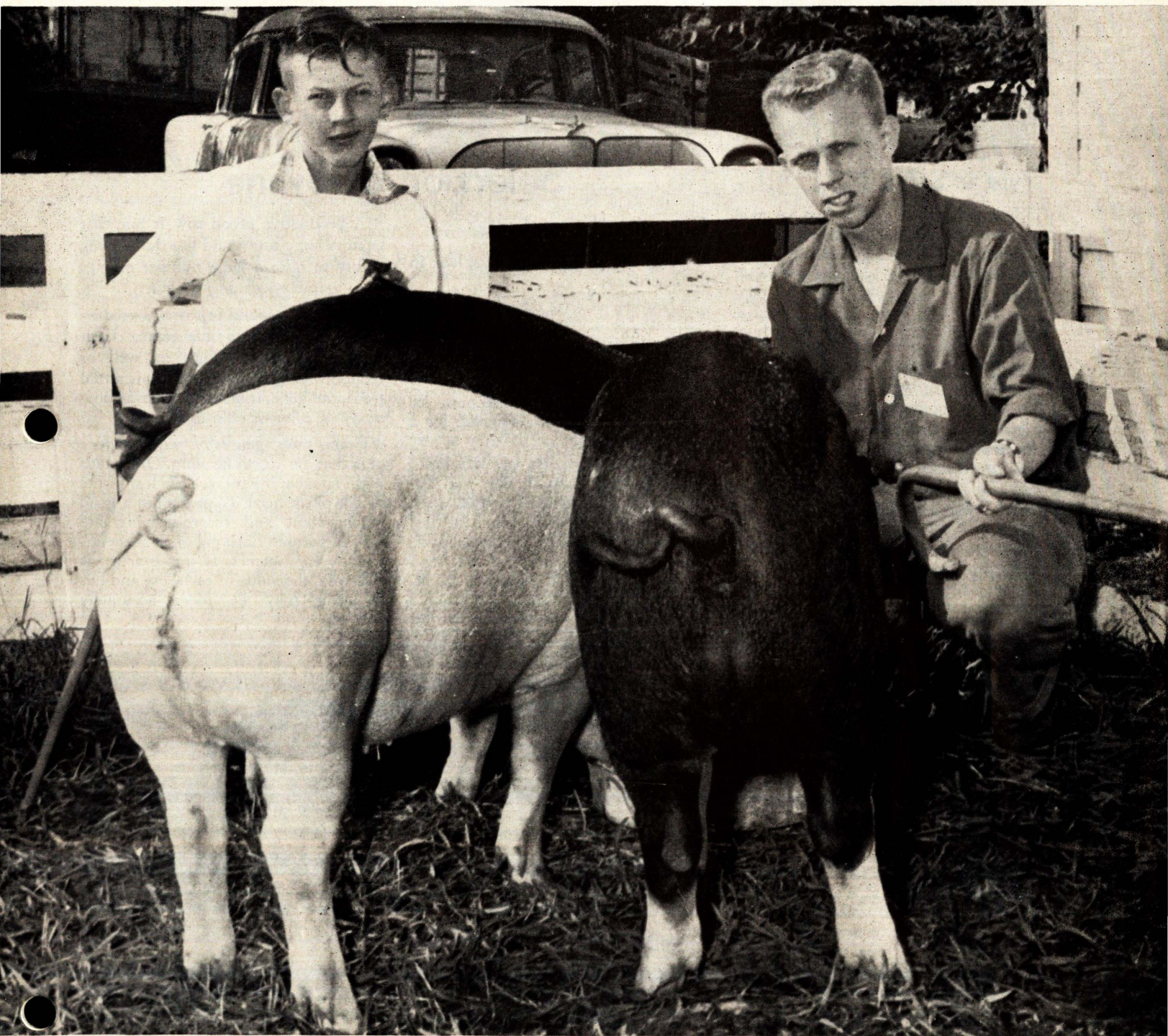
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SWINE PRODUCTION GUIDE

FOR SOUTH DAKOTA 4-H CLUB MEMBERS



Agricultural Extension Service

SOUTH DAKOTA STATE COLLEGE
U. S. DEPARTMENT OF AGRICULTURE

Swine Production Guide for S. D. 4-H Club Members

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Type in Swine

Formerly there were two general types of swine: the lard type and the bacon type. Today, in general, all breeds are considered meat type and are being developed as meat hogs. The more popular breeds are: Hampshire, Berkshire, Yorkshire, Poland China, Chesterwhite, Durocs, Spotted Poland China, Tamworth and Landrace. Note the lifelike picture of a finished market hog on this page. An animal like this carries a high percentage of its weight in the most valuable cuts; the ham loins and bacon sides. This is the type of hog now in demand—a type to keep in mind when planning a breeding improvement program.

Which Breed?

Choice of breed should be based on the availability of good breeding stock within the community and the farmers' preference. There are good producers in every breed as well as in well-planned grade and cross-breeding programs. The important thing is to look for the good individuals, the more productive sows and boars from productive families of pigs.

Fig. 1—This market hog was grand champion barrow at the 1956 International Livestock Exposition in Chicago. This type of hog is now in demand by consumers. It carries a large percentage of its weight in the most valuable cuts and this type should be considered in any breeding program. (Courtesy of Berkshire Association.)

Choosing Sows, Gilts

When choosing sows or gilts, look in the record for:

1. Number of litter farrowed.
2. Number of pigs raised.
3. Rapid gain up to market weight.
4. Amount of feed required per pound of gain.
5. Back-fat thickness. Maximum 1.6 inches, minimum 1.1 inches for a 200 lb. gilt.

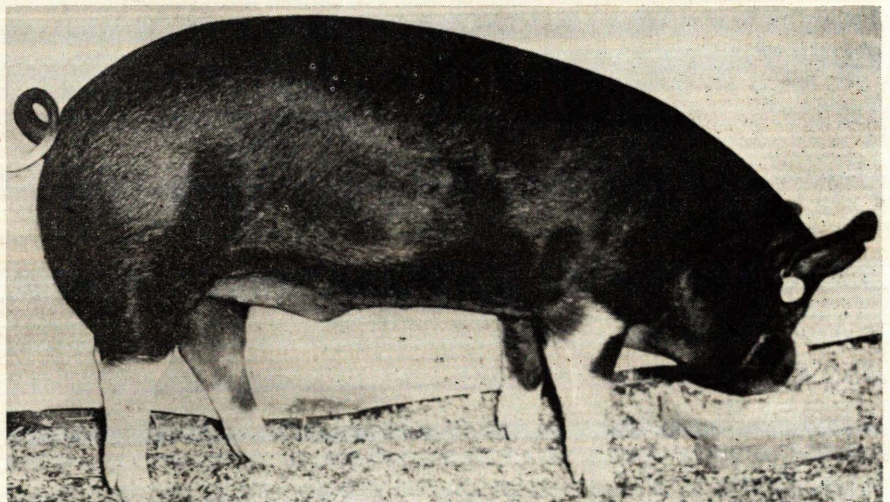
Look for a long body, well developed full deep hams, smooth sides and full loins. The udder should have six well developed sections with prominent teats on each side. Femininity and reasonable refinement are important. Avoid staggy, coarse sows. Look for a friendly disposition. A good brood sow should permit you to enter the pen at any time.

Selection of Swine

A productive brood sow is one that farrows large litters and has the nursing ability to raise a large number of pigs to a desirable weaning weight.

Differences found in sows as producers may be due to inheritance. Conformation between pigs, as well as economy of gain, may be transmitted from one generation to another as definitely as color of skin or hair.

Good sows generally will produce pigs that are worth keeping. Often pigs with valuable inheritance are lost in the shuffle of the herd. To prevent this, good management and record-keeping are very important. Each pig must be identified by ear notches. If this practice is followed, the value of each sow and her offspring may be more accurately judged.



*Supersedes EC 458, "Swine Production," by Iverson and O'Connell.

Choosing the Herd Sire

The first qualification in selecting a boar is that he be selected from Purebred herds. It is possible to find fast-growing, high-quality boars in some of our "almost" Purebred herds, or even in cross-bred herds; but these animals should not be used as sires. They usually look better than they breed while Purebreds generally breed better than they look. This is easily explained since Purebreds are more pure for their good characters and thus tend to pass them on to every offspring.

Remember: the boar is half the herd. He can influence the size of the litter which his gilts and future generations will produce. Also, he influences the vigor and economy of gain, and the meat-type characteristics of his pigs.

Choose a certified litter or tested boar from a Purebred herd. Many Purebred breeders with certified litter or tested boars will have information on the number of pigs farrowed and raised in the litter to which he belonged. They will have records showing how fast he gained, how much feed was needed to produce a pound of gain, how much back-fat was on the boar at 200 lbs., and what the primal cut yield was from at least two of his brothers or sisters.

The boar should have good length, deep full hams with high tail setting, smooth sides and thick loins. He should show trimness with no evidence of excess fat. Strong legs with ample bone and straight short, strong pastern are important. Select the boar when he weighs between 200 and 240 lbs. You will have some idea of how his pigs will look at market weight.

Breeding System

The breeder has three tools to use in breeding better swine. The first tool, not a genetic one, is environment. This, in its simplest aspects, consists of feeding, management, and disease control. Breeders who do well in these phases of production have an excellent start toward a successful breeding program. The other two tools available to the breeder are the genetic ones: system of breeding and selection. These two tools must work together because every selection of parent for the next generation and every mating necessarily involve some system of breeding.

Basically, there are just two systems of breeding practiced by the Purebred breeder. They are outbreeding and inbreeding.

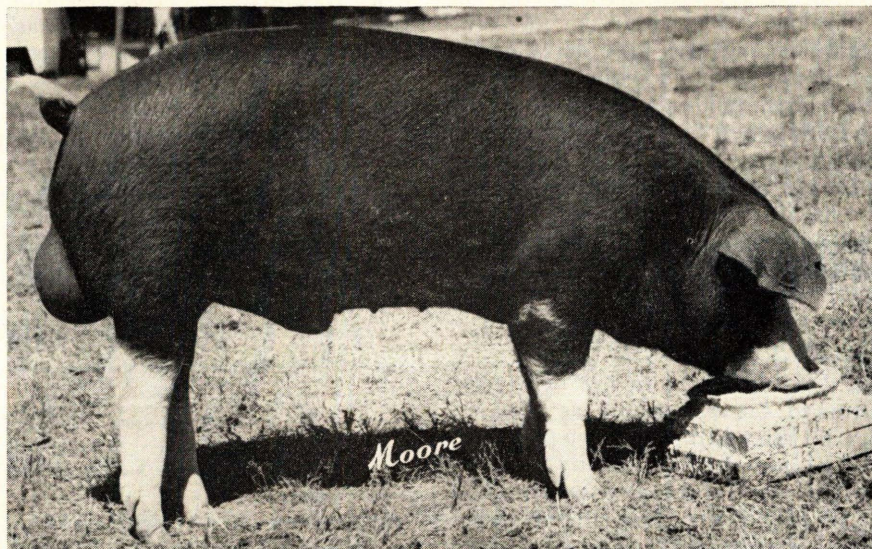


Fig 2—Here is a desirable-type boar: well-grown, rugged and masculine
(Courtesy of Poland China Association.)

Outbreeding is the most common breeding system in use by the swine producer. It means following a breeding system that includes mating animals less closely related than the average of the group to which they belong. In the Purebred business the procedure used would be mating animals of the same breed that are completely unrelated.

Inbreeding is the mating of animals closely related as parent-offspring or brother-sister. Inbreeding should be practiced only by experienced breeders who have a very good knowledge of the ancestry of the breeding stock. Families of livestock that are highly inbred for several generations without very careful selection are likely to develop certain weaknesses, such as sterility, non-resistance to disease and decline in size. Characteristics of inbred parents are more readily transmitted to the offspring than from outbred animals. Should there be undesirable characteristics present, either in the animals or in the ancestry, there is a great chance that the weakness will appear in the next generation.

Breeding Systems Used* in Market Hog Production

The two common systems followed in the production of market hogs are **upgrading** and **crossbreeding**. The quickest, cheapest and surest method of improving farm herds is by a system of upgrading. It is the method best adapted to those farms which do not already have purebred or pedigreed herds. **Upgrading** means that common grade sows are mated with a purebred boar of the same breed continuously,

generation after generation. It means the elimination of the scrub or grade boar. Successful upgrading implies that the purebred boar selected is a good individual and that only the best gilts of each pig crop are retained for future breeding. **Crossbreeding** is generally understood to be the mating of two purebred individuals which belonged to different breeds, as the use of a Poland China boar on Yorkshire sows or a Hampshire boar on Duroc Jersey sows. This is known as a two-breed cross. If a three-breed cross is made, a boar of a third breed should be used during the third mating system; then return to the original boar and use boars of the same breeds in the same sequence in years to come.

Choose breeds for crossing so that the best combination of traits can be obtained in the crosses. Hybrid vigor is very important in commercial hog production. Rotation of boars of three or more breeds is a simple practice for utilizing the principle of hybrid vigor.

Select Your Best Pigs

Sows differ widely in their capacity as producers. A productive brood sow not only farrows large litters, but also has the nursing ability to raise a large number of vigorous pigs to a desirable weaning weight. Differences in sows as producers are in part inherited. Also differences in conformation among pigs (as well as efficiency of gain) may be transmitted from one generation to another as definitely as color of skin or hair.

Pigs out of high-producing sows are worth keeping; they have the valuable inheritance that will continue to return the highest production. Consequently, on farms where hog production is carefully managed, records are kept and each pig is clearly identified by ear-notches. In this way, the value of each sow and her offspring may be more accurately judged.

Steps to Follow in a Commercial Selection Program

1. Identify litter with 8 or more pigs farrowed by ear-notching as soon as possible after farrowing. Two plans are shown; one plan will identify each litter, but will also identify each pig within the litter. Ear notching litters at birth makes it possible to identify each pig quickly and surely at culling time. There is less chance of overlooking gilts that have the best inheritance and therefore, deserve being retained for the breeding herd.

2. Weigh pigs when as close to 200 pounds as possible. Rate of gain, an important factor, can be determined only by weighing. This step takes only a short time and provides information needed to make records complete and dependable.

3. Measure for back-fat thickness at the time the 200 pound weight is taken. (Gilts should have 1.6 inches or less at 200 pounds.)

4. Thus far, you have made your gilt selection from large litters, those that gain fast and those that have the proper back-fat thickness. This information, along with characteristics you normally select for, will be used in making your final selection. These characteristics are: (a) balance, (b) 6 udder sections on each side of underline, (c) deep full ham, (d) uniform width and depth of loin, (e) smoothness and balance in shoulders, (f) firm and trim throughout, and (g) strong, sound feet and legs.

Producers that follow and complete this selection plan—along with securing and using a tested or certified litter boar—are following a sound improvement program. It is one planned to help the commercial hog-raiser develop a more productive herd on a sound basis.

Purebred Producers Selection Program

Breed associations have established a procedure which permits producers to develop certified litter and certified sire programs. This program is sound in all respects and it is strongly recommended that every producer in the purebred business develop such a program in his

herd. The following plan is recommended by the National Swine Records Association.

Steps to Follow in a Litter Certification Program

1. Litters must officially qualify for production registry. Requirements:

- (a) 8 pigs weaned
- (b) weight 275 lbs. at 56 days if gilt litter
weight 320 lbs. at 56 days if sow litter

or
weight 128 lbs. at 35 days if gilt litter
weight 152 lbs. at 35 days if sow litter

- (c) litter-free of swirls, hernia or ridgling boars

2. Two test pigs from litter must weigh 200 lbs. or equivalent at 180 days.

- (a) weights shall be off truck weight of pigs when delivered at cooperating station.
- (b) equivalent 180 day weights to be

calculated by adding 2 lbs. for each day under 180 days old and deducting 2 lbs. for each day over 180.

3. Same two pigs from litter must meet following carcass standards:

| Weight (lbs.) | Loin Area (minimum) (sq. in.) | Length (minimum & maximum) | Backfat Thickness (minimum & maximum) |
|---------------|-------------------------------|----------------------------|---------------------------------------|
| | | | (min-imum & max-imum) |
| 180-200 | 3.5 | 28.5-32.0 | 1.0-1.6 |
| 201-215 | 3.75 | 29.0-32.5 | 1.1-1.65 |
| 216-230 | 4.0 | 29.5-33.0 | 1.2-1.7 |

(a) pigs to be delivered to cooperating slaughter station at weight between 180 and 230 lbs. Weight to be off truck weight. Must be barrows or gilts. Only two pigs can be tested per litter.

(b) each pig to be tattooed when weighed off truck.

(c) loin area to be calculated by means of Planimeter from tracings of loin eye made on parchment paper.

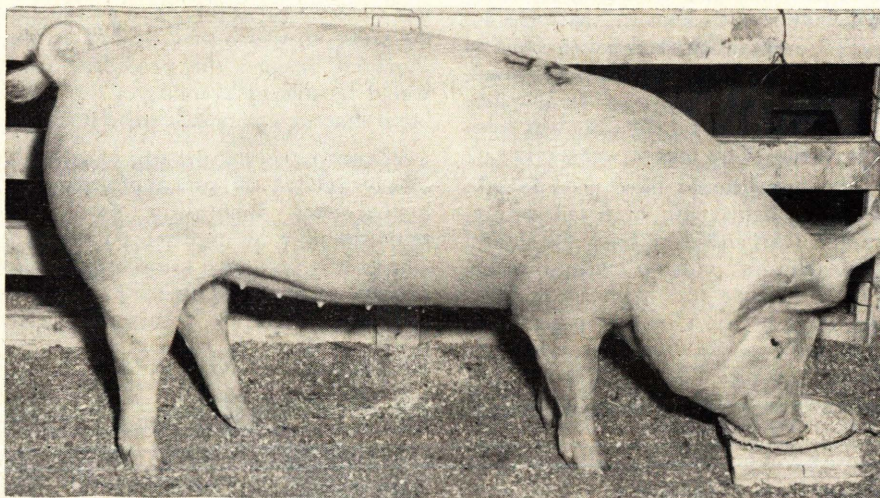


Fig. 3—This is a gilt of excellent type. Notice the deep, full ham, smoothness, trimness and balance of body. (Courtesy of National Yorkshire Registry, Inc.)



Fig. 4—Steps to follow in selection program. LEFT: Ear-notch pigs as soon as possible after farrowing. CENTER: Weigh pigs when about 200 pounds. Weighing is only way to determine rate of gain. RIGHT: Measure back-fat thickness after weighing. Gilts should have 1.6 inches or less at 200 pounds.

- Measure actual fatback thickness to outside of skin and at right angle to back.

5

tions. The heat period lasts 2-3 days. The interval between heat periods may range from 17 to 28 or 29 days, but about 80 per cent will occur on the 19th to the 22nd day. The average is about 3 weeks or 21 days.

Boar's Age at Breeding: Factors which will determine the number of sows the boar can safely breed during a breeding season include: age, distribution of the services, natural vigor or fertility, length of the breeding season, feeding and the way he is handled. A boar is considered at his best when 18 months to four years of age.

Some boars are naturally more vigorous than others and can settle twice the number of sows in a given breeding season. Generally speaking, if boars are used when under one year of age, only one sow a day should be serviced. For yearling and mature boars, two sows a day and occasionally three. However, if

used to this extent, boars must be in good health and vigor.

During the off-season, the boar should be kept relatively thin, in good health, and vigorous. Three weeks before the breeding season he should be fed generously so that he will be in a vigorous, active condition for service. At no time should he be allowed to become fat and sluggish.

Methods of Breeding: There are two methods of breeding—hand-coupling and letting the boar run with the sows.

Hand-coupling has the advantage that accurate breeding records may be kept. When hand-coupling is practiced, boars can also service many more sows.

When a boar runs with the herd, he cannot service as many sows as with the hand-coupling method. On the average farm, an older, free-running boar can service two sows a day for several days but he should not run free with a large number of sows for long periods of time.

Feeds for Pigs

Feed makes up about 70 to 80 per cent of the total cost of pork production. Whether this feed is properly used or not determines in large part the relative profit from a hog enterprise. Unbalanced rations waste feed and may cause unthrifty litters and runty pigs.

Farm grains alone are not a balanced ration. Forage by way of pasture or hay helps greatly in several respects, but in most cases is not complete feeding. The use of supplements is necessary.

Balanced rations provide in proper amounts: (1) grain, (2) protein supplement containing the right quality of protein, (3) minerals and (4) vitamins supplied most cheaply by pasture or leafy green hay. During recent years antibiotics and, to a less extent, hormones, have come to be used.

Corn and Small Grains

Corn is the dominant hog feed of the country. However, small grains—barley, oats, wheat, rye—are almost as efficient as corn for feeding hogs and, with slight changes in the ration, serve as good substitutes. Most small grains are best fed as mixtures of two or more grains. Following are approximate values on an equal weight basis of the different farm grains when used as hog feeds:

Corn, 100 per cent. This is used as the standard and most times as the only grain in the ration.

Wheat, 100 per cent. Feed not more than one half of the ration mixture. Wheat is a valuable human food. It is commonly used as hog feed only when below milling standard or when other grains are not readily available.

Barley, 95 per cent. Like corn, barley may be fed as the only grain but supplements must be added to balance the ration.

Grain Sorghums, 90-95 per cent. The grain sorghums include kafir, milo, feterita and sorgo. In chemical composition, these grains are very similar to corn. They are rich in carbohydrates but especially deficient in protein, minerals and vitamins. Like the other grains, they are fattening in their properties and require to be supplemented with a protein concentrate, minerals rich in calcium and common salt, and vitamins for satisfactory results.

Oats, 85 per cent. One of the most popular grains for breeding stock of all kinds, oats is also an effective hog feed but should, for best results, make up not more than about one-third of the ration mixture.

Rye, 95 per cent. One of the less palatable grains, rye should always be fed with other grains. It should not make up more than about one-third, or, at most, one half, of the mixture. Beware of ergot! It is more apt to affect rye than other grains. A rye-ergot combination has been known to sicken hogs and cause abortion.

Good Proteins Needed

Grains alone are not enough for hogs. Feeds that provide extra proteins are needed. They are body building substances that help produce the tissues, hair, hoofs, and tendons of the hog's body. Experience has shown that weanling pig rations need about 18 per cent total protein and well-grown brood sows' and shoats' rations about 14 per cent. But, corn contains only 9 per cent protein and small grains about 12 per cent. Furthermore, these and other seed or cereal proteins are not, as a rule, complete proteins but lack certain amino acids which pasture and particularly animal by-products supply much more effectively. Here is a list of widely used protein supplements:

Dairy By-Products (on dry basis): Skim milk and butter milk, 34 per cent protein; whey, 12 per cent.

Tankage and Meat Scraps, 52 per cent to 60 per cent protein. These are by-products of packing plants—meat scraps, bones, and fat trimmings thoroughly sterilized by cooking.

Soybean oil meal, 45 per cent protein. Of all plant or seed proteins, soybean oil meal protein ranks near the top and is nearly as efficient as protein from animal source. (Soybeans themselves having a high oil content, are not a satisfactory hog feed for the reason that, whether fed cooked or raw, the oil is likely to result in soft pork. Furthermore, the raw soybeans, even though ground, are not palatable to hogs.)

Linseed meal, 35 per cent protein. This oil meal while lower in protein than soybean oil meal is practically as good and makes for a good consistency in swill when used in hog feeding.

Wheat middlings, 18 per cent protein, and wheat bran, 16 per cent protein. These mill feeds have a place in hog feeding although they are not now used as much as in former years.

Because some of these supplements contain more protein than others and also contain varying qualities of protein in terms of their amino acid content, it is necessary to feed them in different amounts. A smaller proportion of protein supplement is needed when higher protein small grains replace corn.

Antibiotics, Vitamin B₁₂ Hormones. During recent years antibiotics have come to be used extensively in pork production. Penicillin has for years been known to the general public for combating infection. It is now also used in swine nutrition along with other antibiotics: aureomycin, bacitracin, strep-

tomycin, terramycin, and still others. These are commonly sold by way of pre-mixes as prepared by the manufacturers who guarantee the content of the particular antibiotic with directions for use, so that usually at least 5 milligrams of the pure antibiotic are contained in every pound of the finished hog ration. This is a tiny fraction of the amount used for combatting disease, but even in such limited amounts, many antibiotics increase the rate of gain and also the economy of gain in terms of feed necessary for every pound of gain. Most commercial hog supplements are now fortified with one antibiotic or another.

The exact nature of antibiotics in animal nutrition is not known. They are supposedly not nutrients in themselves. But they are known to discourage the growth of harmful organisms in the digestive tract, at times helping control scours. They appear to make nutrients more available for assimilation. Antibiotics are used mainly for growing and fattening pigs, not for breeding stock.

Frequently Vitamin B₁₂ is included with antibiotics in swine feeding, both for growth and fattening as well as breeding stock. As in the case of antibiotics, the manufacturers and distributors are required to state a guaranteed content of pure Vitamin B₁₂ in every pound of pre-mix. They usually give directions for use so that at least 5 micrograms are mixed in a pound of the finished feed. Less than that amount or none at all, is needed if the ration is balanced mainly with animal by-products such as meat scraps, skimmilk, fish meal, tankage, or still other animal by-products. Vitamin B₁₂ is carried in relative abundance in these feeds from animal source, but plants, whether pasture, hay, or silage, are very deficient in this vitamin.

Hormones for pigs are still in an experimental stage and so far none of them are generally recommended.

While either antibiotics, Vitamin B₁₂ or hormone may stimulate growth in hogs fed almost any ration, the margin of improvement will be smaller with thrifty animals already on well-balanced rations.

Well-planned management, including the feeding of at least some animal by-product, the use of pasture and leafy green hay, is still good practice.

Purchased Feed

Commercial - mixed feeds provide many producers with the necessary supplements for feeding hogs. Those to be fed with farm grains frequently have



Fig. 7—Bred sows, like these shown above, need exercise. This may be enforced by placing a self-feeder 20 to 30 rods from the sleeping quarters.

from 30-40 per cent protein. They usually have suitable minerals, including trace minerals and in many cases antibiotics. When buying these feeds it is wise to make sure that fiber content is not above 10 per cent. Most commercial hog supplements, especially those of well established manufacturers, are well formulated to balance farm-grown grains.

Ways to Feed

Self Feed or Hand Feed?

Self-feeding saves work. Where self-feeding has been compared with hand-feeding, self-feeding has also produced more rapid and economical growth and fattening. Some desirable bulk may be provided by fairly liberal proportions of oats or alfalfa meal which at the same time tends to make for a better meat-type market hog.

Where plenty of bulk in the ration and plenty of exercise is provided, bred sows have done very well on self-feeders. Bulk may be provided for brood sows by using about 30 per cent alfalfa meal or ground alfalfa hay plus some additional oats in the self-fed mixture. Exercise may be enforced by having the self-feeder 20 to 30 rods away from the sleeping quarters.

Water should be available at all times, preferably near the sleeping quarters.

How to Prepare Grain

In most cases, all small grain should be ground. Corn should also be ground during the summer season when it has

become dry and hard. At other times corn may be fed on the ear or shelled. Medium fine texture is better than a finely ground texture. Ear corn, when ground, has been found good feed for both growing and fattening pigs but should, for best results, be ground fine, so it will pass through a 3/16" screen of a hammer mill. Ground ear corn is not well adapted for self-feeding unless ground fine enough to prevent chunks of cobs collecting in the bottom of the trough. When cobs are ground finely enough they have, pound for pound, a feeding value about half that of the corn grain itself.

Soaking whole grain has not proved satisfactory as a substitute for grinding. Pigs are apt to eat the soaked whole grain hurriedly, failing to chew it properly for good digestion.

Balanced Rations

Early Weaning

You will sometimes find it necessary to wean pigs very early after birth. However, before early weaning you should give the pigs several nursings of the first milk (Colostrum). This first milk is richer in total solids and minerals and much richer in proteins. It provides immune bodies for the newborn which play an important role in disease-resistance early in life. Early weaned pigs are considered more costly but can be raised successfully if properly fed and managed. Young pigs will generally drink from a shallow container or mechanical dispenser.

Feeding Program for Early Weaned Pigs

Ration 1

1st, 2nd and 3rd day—nurse the sow.

4th to 21st day—Reconstituted or liquid milk substitute.

10th to 35th day— $\frac{1}{2}$ and $\frac{1}{2}$ mixture of dry milk substitute or prestarter and creep feed. (See Ration 2)

35th to 60th day—Creep feed.

Weaning pigs at 3 weeks of age is a more suitable time than the real early weaning. When it is advantageous to breed the sows as soon as possible after farrowing, the litter can be removed and raised on dry feed. The first two weeks the pigs should be fed a half and half mixture of milk (substitute or prestarter) and creep feed. Thereafter creep feed only.

Creep Rations

Rations 2, 3 and 4. Provide a creep ration soon after birth.

Ration 2

40 lbs. cracked corn
40 lbs. hulled oats
10 lbs. meat scraps or tankage
10 lbs. soybean oil meal
 $\frac{1}{2}$ lb. trace element salt
1 gm. antibiotics and $\frac{1}{2}$ mg. Vitamin B₁₂

Ration 3

30 lbs. rolled oats
60 lbs. ground corn
5 lbs. tankage
4 $\frac{1}{2}$ lbs. soybean oil meal
 $\frac{1}{2}$ lb. salt
1 gm. antibiotic and $\frac{1}{2}$ mg. Vitamin B₁₂

Ration 4

Hulled oats fed as the only creep feed has also produced favorable gains.

Granulated sugar added to the above ration in the amount of 10 lbs. per 100 lbs. will help to increase palatability. This is important only as an aid to induce pigs to start eating the feed.

Ration 5, 6, 7 and 8. Growing and fattening in dry lot.

Ration 5

Suggested from weaning to 75 lbs.
55 lbs. cracked corn
20 lbs. ground heavy oats
10 lbs. tankage or meat scraps
5 lbs. (choice) alfalfa meal
10 lbs. soybean oil meal
 $\frac{1}{2}$ lb. trace element salt
 $\frac{1}{2}$ gm. antibiotic and $\frac{1}{2}$ mg. Vitamin B₁₂

Ration 6

Recommended for self-feeding from 75 lbs. to market age.

Shelled corn in self-feeder, commercial protein supplement or a mixture of 40% tankage, 40% soybean oil meal and 20% green leafy ground and cured alfalfa with 3 to 4 grams of antibiotics for 100 lbs. of supplement in a self-feeder.

Mineral—Pasture—Water

Suggested protein levels for swine rations:

| | |
|----------------------|--------|
| Pigs up to 75 lbs. | 14-16% |
| Pigs 75 to 150 lbs. | 12-14% |
| Pigs 150 to 225 lbs. | 10-12% |
| Bred sows | 14-15% |
| Milking sows | 16-17% |

Average feed consumed per pig per cent body weight:

| Weight | Lbs. | Pigs |
|----------|---------|----------|
| | Per Day | Will Eat |
| 50 lbs. | 2.6 | 5.2% |
| 100 lbs. | 4.1 | 4.1% |
| 200 lbs. | 7.2 | 3.6% |
| 300 lbs. | 8.1 | 2.7% |

Ration 7

With limited amounts of skim milk, buttermilk, or whey—self-fed or hand-fed mixture:

Ground Corn (3/16" screen) 50 lbs.
Ground Barley, wheat, rye
or oats 30 lbs.
Soybean oil meal or linseed meal 10 lbs.
Ground alfalfa hay 10 lbs.
Ground limestone 1 lb.
Trace mineralized salt 0.5 lbs.
 $\frac{1}{2}$ gm. antibiotics
101.5 lbs.

Hand feed daily per head: Whey, 1 gallon or more or Skim milk or buttermilk, 2 quarts or more.

Ration 8

With liberal amounts of skim milk or buttermilk—self-fed or hand-fed mixtures:

90 lbs. Ground corn and oats or similar grain mixture
10 lbs. Ground alfalfa hay
0.5 lbs. Trace mineralized salt
 $\frac{1}{2}$ gm. Antibiotics

100.5 lbs.

With a gallon or more of skim milk or buttermilk daily per head.

(Gilts, Brood Sows, Boars)

Ration 9

Recommended for young growing gilts.

55 lbs. Ground corn
25 lbs. Ground oats or other small grain

10 lbs. Ground alfalfa hay
5 lbs. Soybean oil meal or linseed meal
5 lbs. Tankage or meat scraps
1 lb. Ground limestone
0.5 lb. Trace mineralized salt
 $\frac{1}{2}$ gm. Antibiotic

101.5 lbs.

Ration 10

For self-feeding replacement gilts.

30 lbs. Ground corn
30 lbs. Ground oats or other small grain
30 lbs. Ground alfalfa hay
5 lbs. Meat scraps or tankage
5 lbs. Soybean oil meal or linseed meal
0.5 lbs. Trace mineralized salt

100.5 lbs.

Ration No. 10 is also suitable for maintaining boars when fed at the rate of about $1\frac{1}{2}$ lbs. of the mixture for each 100 lbs. of live weight. Increase this amount to about $2\frac{1}{2}$ lbs. per 100 lbs. live weight during the breeding season.

Ration 11, 12 and 13—Suggested for self-feeding gilts and sows during gestation.

Ration 11

32 lbs. Ground shelled Corn
32 lbs. Ground oats
32 lbs. Ground good quality alfalfa hay
2 lbs. Tankage or meat scraps
2 lbs. Soybean oil meal
 $\frac{1}{2}$ lb. Trace element salt (Iodized)
 $\frac{1}{2}$ lb. Bonemeal

Ration 12

46 lbs. Ground corn
45 lbs. Ground alfalfa
4 lbs. Tankage
4 lbs. Soybean oil meal
 $\frac{1}{2}$ lb. Bonemeal
 $\frac{1}{2}$ lb. Trace element salt

Ration 13

Self-feeding mature sows in dry lot during gestation.

20 lbs. Ground corn or ground ear corn
30 lbs. Ground oats
40 lbs. Ground alfalfa hay
3 lbs. Meat scraps or tankage
3 lbs. Soybean oil meal or Linseed meal
0.5 lbs. Trace mineral salt

Ration 14, 15 and 16—Suggested for hand-feeding sows during gestation.

Ration 14

1 to $1\frac{1}{2}$ lbs. Ration No. 13 and
1 lb. Corn per 100 lbs. live weight per day per sow

Ration 15

40 lbs. Ground corn
40 lbs. Ground good quality alfalfa hay
10 lbs. Soybean oil meal
10 lbs. Tankage or meat bone scraps
½ lb. Trace element salt
1 lb. Mineral
1 mg. Vitamin B₁₂
Corn on cob or shelled, hand-fed according to condition desired.

Ration 16

Feed 2 lbs. per 100 lbs. live weight of the following:

42 lbs. Ground oats
42 lbs. Ground corn or barley or both
16 lbs. Ground alfalfa hay
½ lb. Trace element salt
½ to 1 Gal. Skim milk or butter-milk per day per sow
Rations 17 and 18—High roughage brood sow rations during gestation.

Ration 17

13 lbs. Corn silage (yield 60 bu. per acre)
1.5 lbs. High quality protein supplement. Supplement used was made up with the following in per cent:
53.0 lbs. Soybean oil meal
25.0 lbs. Meat and bone scraps
15.0 lbs. Alfalfa meal
4.0 lbs. Bone meal
2.0 lbs. Iodized salt
.5 lbs. Vitamin B₁₂ Supplement
.25 lbs. Vitamin A & D Supplement
.25 lbs. Vitamin B Supplement

100.0 lbs.

Ration 18

Self-feeding ration containing corn cobs for bred gilts.

43.5 lbs. Ground corn
35.0 lbs. Ground corn cobs
5.0 lbs. Molasses
5.0 lbs. Soybean oil meal
5.0 lbs. Meat and bone scraps
5.0 lbs. Alfalfa meal (17%)
.5 lbs. Pulverized limestone
.5 lbs. Steamed bone meal
.5 lbs. Iodized salt

100.0

Vitamin B₁₂ was added to the ration from a commercial B vitamin, supplement containing 10 mgs. of Vitamin B₁₂ per pound. One pound of this was added to 1000 lbs. of feed to supply 10 micrograms per pound of ration. Average daily ration consumed around 10 pounds.

Lactating Sows

Ration 19

Suggested for self-feeding.
No feed except water first day. First 4 or 5 days same ration as during gestation, then gradually change it to:
49 lbs. Ground corn
25 lbs. Ground oats
10 lbs. Ground alfalfa hay
7 lbs. Tankage
½ lb. Trace element salt
7 lbs. Soybean oil meal
1 lb. Bone meal

Ration 20

Suggested for hand-feeding sows during lactation.

Ration No. 16 may be hand-fed to sows all they will eat when pigs are 10 to 14 days old, or, all they care to eat of the following:

45 lbs. Ground corn
25 lbs. Ground oats
20 lbs. 35 to 42 per cent Commercial protein supplement
10 lbs. Ground alfalfa hay

Before Farrowing

About 3 or 4 days before farrowing, mix the sow's ration half and half with wheat bran or middlings, or continue feeding same bulky rations as you were feeding during gestation. The bulky and laxative feeds help prevent a feverish condition. Recent studies show that it is not desirable to reduce the sow's feed before farrowing.

After Farrowing

For the first day no feed except water. Next 4 or 5 days same ration as during gestation; then gradually change to lactation ration similar to that suggested in example 19 and 20, gradually increasing each day so that she is on full feed again 7 to 10 days after farrowing.

Fresh water should be available to all pigs at all times. They will drink about one gallon for every 100 pounds live weight per day. More in hot weather. Less if it is near freezing point.

Vitamin A, D and B-Complex are amply supplied if rations contain 10 per cent alfalfa leaf meal or 15 per cent good alfalfa or other legume hay by weight or green forage.

When animal proteins are replaced by vegetable proteins, the minerals should be increased. It is advisable to feed minerals free choice.

Minerals

Salt should be fed free choice in addition to mineral at all times. If salt is added to combination of grain and protein supplement instead of free choice, use not over ½ pound to each 100

pounds of feed. If added only to protein supplements, 2 to 3 pounds of salt to each 100 pounds of supplement is sufficient.

Mineral should be available free choice at all times. Simple effective mixture consists of:

Steamed bone meal 40 lbs.
Ground Limestone 40 lbs.
Trace Mineral, Salt 20 lbs.

Vitamins Are Essential

Vitamins have come to be recognized as being very essential for the proper nutrition of swine. A lack of vitamins in the ration results in the so-called "deficiency" diseases. Hogs are known to require Vitamin A, B Complex vitamins including panathenic acid, riboflavin, thiamine and pyroxidine, and niacin and Vitamin D.

Normally, a well-balanced grain ration fed on good pasture meets all of these vitamin requirements. When the hogs are not on pasture, choice field-cured alfalfa fed with a good ration will adequately meet the requirements. The feeder should remember that the pigs have a relatively small stomach and that the alfalfa fed should be of choice quality—fine stems, an abundance of leaves and bright green in color. Regular access to sunshine will generally take care of all Vitamin D requirements.

Pasture Suggestions

Permanent Pastures

Permanent pastures are those that are biennial or perennial in nature. In other words, they are pastures that do not have to be seeded each spring.

Alfalfa is rated as the most outstanding pasture. It provides the most continuous pasture and for a longer season than other forage crops. Alfalfa is high in proteins, minerals and vitamins.

Red Clover and Alfalfa-brome rank next to alfalfa as pasture for swine. Both are similar to alfalfa in feeding value.

Sweet Clover during the first year makes a good pasture. During the second year it may grow rank and stemmy and hence, is less palatable.

Brome grass pastures are good during the growing season; however, during the dormant stage they are of little value.

Blue grass is good in the early spring and following the fall rains, but is dormant as a rule most of the summer. For this reason it is not rated very high.

Temporary Pastures

Rape is rated as the best of the temporary pastures. Experiments have shown that it is almost as valuable as alfalfa as a hog pasture. It is frequently

sown with oats. The oats come up early in the spring, providing early pasture and the rape is large enough by the time the oats get stemmy to carry the hogs through the remainder of the growing season.

Rye seeded in the fall will provide very early pasture. It is a good pasture

early in the spring and lasts until it heads out and becomes unpalatable.

Sudan grass is a very good hot weather pasture. It is sown after warm weather begins and lasts until frost. If a pasture of blue grass, brome grass, or crested wheat grass, is used early in the

spring and late in the fall, sudan grass makes an excellent pasture during the dormant stage.

Oats or barley are frequently used between the time that rye pasture is palatable for hogs and the time sudan grass comes into pasture stage.

Types of Housing and Equipment

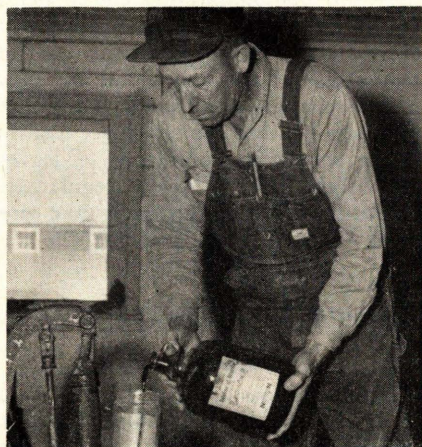


Fig. 8—Wash and disinfect pen.

Fig. 9—LEFT: Wash feet, underline before farrowing. CENTER: A farrowing stall restricts activity of sow, prevents crushing pigs. RIGHT: Litter and sow in farrowing stall.



Individual or Portable?

The individual or portable-type houses are well adapted to a sanitation program and for this reason are used by producers. They are generally quite low in cost, well suited to small herds, and provide needed shelter for pigs on pasture. The A-type house is the most simple and least expensive of portable houses. The rectangular or box-type house with shed roof and straight side walls, varying from 3 to 4 feet at the back and 6 to 7 feet at the front has more or less replaced the A-type house in recent years. A house 6 by 8 or 7 by 8 feet will be satisfactory for young sows. However, for larger sows weighing over 300 lbs., an 8 by 8 feet house is recommended.

Portable houses are often made large enough to accommodate two sows. In this case they should be not less than 6 by 12 feet for young sows and not less than 8 by 14 for larger sows.

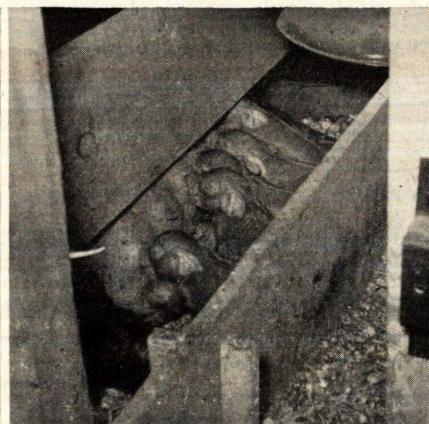
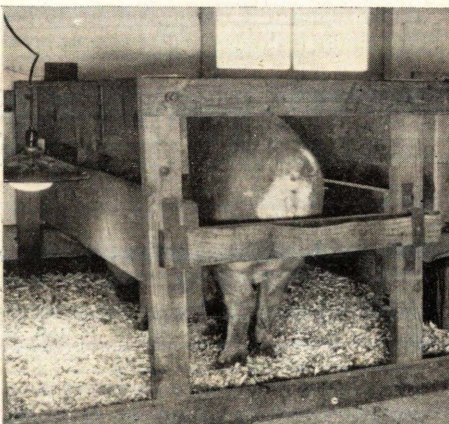
Central-Type House

This permanent central-type hog house has several advantages over the individual type. Producers can give more effective supervision and it is easier to care for brood sows at farrowing time and to feed, clean and care for hogs generally. Provision should be made to properly heat, insulate and ventilate the central-type house. Wide alley and storage space for feed and bedding will save time and labor. When estimating feed storage space, allow approximately one ton of feed per month for each 10 sows.

Sanitation Before the Sow Farrows:

Clean farrowing pen thoroughly to protect new pigs from filth-borne germs. After cleaning, douse all parts of pen with scalding water to which has been added one can of lye to each 8 gallons of water.

After dirt has been soaked loose,



scrape and scrub the walls, floors, troughs and guard rails until thoroughly clean. Last of all, give the pen a final rinsing with scalding water to which cresylic disinfectant has been added at the rate of $\frac{1}{2}$ pint to two gallons of water.

Caution: Protect yourself at all times against the caustic effects of lye, cresylic acid and all other strong disinfectants.

All equipment to be used in the pen should be thoroughly cleaned and disinfected.

Wash the sow—especially udder, sides, and legs. This should be done just before she is placed in the farrowing pen. Baby pigs contract disease easily. When the sow is clean, suckling pigs are better protected. Water should be warm. Use plenty of soap. An ordinary household scrubbing brush is helpful but should be used carefully.

Farrowing Stalls

A farrowing stall is a device to restrict the activity of the sow at farrowing time. Any stall arrangement used should be practical, easy to build, and if constructed correctly, will save many pigs from being crushed or smothered.

Short Bedding

Death losses usually decrease from overlaid pigs when farrowing pens are bedded with short bedding of which chopped straw or hay, ground corn cobs, and shavings are good examples. The sow cannot pile this type of bedding as easily as she can long straw, and the newborn pigs can move about more freely in the pen. There is some indication that short bedding material will absorb more liquid than long bedding.

Laboratory Services

When diagnosing a disease that may become a major problem, veterinarians often want to use extra precautions to prevent serious losses to farmers.

The Animal Disease Diagnostic Laboratory at South Dakota State College, Brookings, will assist veterinarians in diagnostic work. The laboratory service, therefore, should be used to aid—not replace—the veterinarian.

It may be necessary for the veterinarian to submit diseased tissues of a sick animal showing typical signs and symptoms to this laboratory or to other diagnostic laboratories. Careful study may determine the cause of the disease. For reliable results, only fresh or properly preserved material should be submitted. Decomposed material is unsuitable for study.

Guides to Sanitation

1. **Place young pigs on clean pasture** not used by hogs for the past two years. Old hog lots and pastures can be serious sources of parasitic and other types of infections such as necro and erysipelas. Pasture rotation is a big help.

2. **Keep manure piles removed** from hog yard and do not spread hog manure on areas intended for use by hogs. These may act as reservoirs of disease germs and parasites. Manure from infected animals is a common source of internal parasite infection in young pigs.

3. **Keep all hog lots well drained and dry.** If young pigs are placed in a sepa-

rate lot, make sure there is no drainage from lots where older pigs are kept.

4. **At first sign of sickness** remove all ailing animals from the herd. Place them in quarters not ordinarily used for healthy animals.

5. **Maintain a closed herd.** Raise all your own replacement gilts. Buy no animals unless absolutely necessary. All too often we buy somebody else's trouble.

6. **Quarantine newly purchased animals** for at least 1 month to be sure they are free from disease. When buying new animals, make sure about the health of the herd and its history. Determine from any available source the disease history of the herd. One infected animal introduced into your herd can endanger the health of your entire herd.

How to Control Parasites

Mange and Lice Control

Sarcoptic Mange is a skin disease caused by mites. Pigs of all ages are susceptible. The disease is spread by infected pigs running with the herd. It is usually brought to the farm by infested animals.

Signs: Scurfy, rough skin, loss of hair, constant itching and unthriftiness.

What to do: Mange mites are extremely difficult parasites to control and repeated applications of miticides for complete eradication may be necessary.

Chlordane, lindane, or benzene hexachloride may be applied as a spray in a water solution. Add one pound of 25 per cent lindane or 20 pounds of 6 per cent gamma benzene hexachloride to 50 gallons of water. Cover the animal bodies thoroughly. Complete spraying will require about one quart of solution per pig.

Many swinemen find it profitable to treat pigs for mange routinely, about weaning time. However, pigs of any age may be treated with safety. Spray not later than one month before pigs go to market.

Chlordane and lindane are equally effective. In addition they are free from the highly objectionable odor of benzene hexachloride. They may be purchased in liquid form which facilitates making up spray solutions, and avoids clogging of the nozzle jet. The cost of all of these products is comparable. For these reasons, most swinemen prefer the more purified products, chlordane or lindane.

Hog lice are common, affecting pigs and hogs of all ages.

Signs: Itching, loss of hair, and unthriftiness. Baby pigs are especially susceptible to lice while nursing.

What to do: If chlordane, lindane, or benzene hexachloride are used for mange control, these treatments adequately control lice.

Worm Parasite Control

One approach to the control of worm parasites is based on recognition of the fact that worm parasites infect all pigs of all ages. It is possible to devise regular systems of preventive treatments which attack almost all kinds of worm infections. The principle of attack on worm infections by preventive treatment is a distinct contrast to the older idea that worm treatments should be used in pigs only to cure infections which had already injured the pigs. Superior methods of management and sanitation are the basis of worm control for all forms of livestock.

The following listed drugs can be used in a schedule of preventive treatment for worm parasites. They are sodium fluoride, cadum and piperazine compounds, phenothiazine and hygromycin. When sodium fluoride, for example, is used to make an attack on the large roundworm, or *Ascaris*, it is used in a different schedule of treatment than farmers have been practicing before. The recommended schedule of treatment should be followed in order to obtain satisfactory results.

Roundworm Control

The end result of infection with the large roundworm (*Ascaris Lumbricoidea*) is the same as infection with most other worms. It is most severe in pigs. Infected pigs are unthrifty, have a rough haircoat, cough, are anemic, and emaciated. In short, the pigs do not stay on a production schedule if indeed some of them are not killed by the worms. The present basis of control of this worm is this: the worm requires 60 days to mature in a pig. This means that 60 days after a pig eats the infective *Ascaris* egg, the *Ascaris* worms will have matured and will be producing their own eggs. The *Ascaris* egg, therefore, is the source of infections for the same pig or pigs in succeeding crops. If all pigs become infected by this worm, we can assume that around 60 days of age each pig will begin to pass *Ascaris* eggs. To attack this worm successfully we must prevent its egg production. By treating the pigs with recommended drugs when they are 50 days old, we can remove the first crop of worms, improve the physical condition of the infected pigs, and reduce the amount of exposure to pigs in succeeding crops. Starting from birth, treat each pig at 50 days of age, at 100 days of age, and at 150 days of age. The last treatment should be given only if the pig is not about to go to market.

How to Use Sodium Fluoride

1. Make a $\frac{3}{4}$ per cent mixture of dry grain ration and sodium fluoride as follows:

Add sodium fluoride at the rate of $\frac{3}{4}$ pound to 100 pounds ground grain. Mix thoroughly. (A 100-pound grain and sodium fluoride mixture will take care of 40 weanling pigs for one day.)

2. Put pigs back on regular feed the day after treatment.

3. The treatment should not be given to pigs showing signs of intestinal disorders such as diarrhea or to sows due to farrow in less than two months.

4. Use the treatment in the schedule based on 50-day periods. If the 50-day treatment schedule interferes with your present practice of weaning or vaccination, have your veterinarian advise you on a rearrangement of the vaccination or weaning schedule.

Piperazine Compounds

Piperazines, notably piperazine adipate, are promising anthelmintics for horses, cattle, swine, and chickens. Piperazine is essentially non-toxic in effective doses (about 0.1 to 0.2 gram of a salt, or 50 milligrams of the base, per

pound of body weight). It is easily administered and contains no metallic or other noxious ingredients. It seems to cause no side effects.

The new wormers containing Piperazine Compounds appear to work satisfactorily in the control of worms in swine. Piperazines used in treatment to remove large roundworms from swine seem to be destined for prominent and profitable use. Piperazine Compounds have shown promise of succeeding both Sodium Fluoride and Cadmium Salts as a roundworm treatment. It is effective and the possibility that the hog will get too much is very remote. When using Piperazine Compounds follow the instructions printed on the container.

A balanced ration containing 0.44 per cent of cadmium anthranilate, fed either dry or wet for 72 hours, will remove over 90 per cent of the roundworms harbored by pigs. It actually kills the roundworms in the pig before they are expelled. The cadmium compounds do not affect palatability of the feed and are quite safe to use.

Strongyle Worm Control

The "strongyle" worm group consists of some 20 worms which inhabit either the stomach, the small intestine, or the large intestine. This grouping does not include lungworms, whipworms, and thorny-headed worms. Infection from the strongyle group results in unthriftiness and failure to maintain a market schedule. Almost all of these worms are directly susceptible to the drug called phenothiazine. We can make a direct attack on the worms by including small amounts of phenothiazine in the grain fed each day to pigs. The amount of phenothiazine necessary is one gram, which is $\frac{1}{28}$ th of an ounce, per day. After pigs are accustomed to the taste of this small amount of phenothiazine in their grain, they consume such medicated grain without trouble and the phenothiazine in its turn directs a continuous attack against the "strongyle" forms.

Consult your veterinarian about placing your pigs on this low-level system of phenothiazine from the time they begin to consume grain until they are finished for market. Phenothiazine is inexpensive, is very safe, and has been widely used by veterinarians in swine parasite control.

Hygromycin

Hygromycin is the newest of products that are being used to control swine worms. This feed additive appears very promising and very effective in the elimination of these internal parasites of swine.

There are two kinds of worms which infect our South Dakota hogs which we must attempt to control by management and sanitation alone since no effective drugs are known. These two kinds of worms are the lungworms and the thorny-headed worm. Both of these worms require what are known as "intermediate hosts" for their survival outside of pigs and for their transmission to other pigs. Lungworms live in earth worms. Thorny-headed worms live in white grubs. In turn, pigs become infected with lungworms and thorny-headed worms when they eat the infected earth worms or white grubs. Because more earth worms and more white grubs will occur in old permanent pastures than in temporary pastures, the control of lungworms and thorny-headed worms is aided by raising pigs on temporary pastures as much as possible.

Fly Control

Barn sprays: For general fly control, an application to all wall surfaces of a 2.5 per cent DDT water suspension at the rate of one gallon per thousand square feet of surface is recommended. This spray should be reduced from a 50 per cent DDT wettable powder concentrate (40 lbs. 50 per cent DDT wettable powder to 100 gals. of water) and applied with a nozzle giving a fan-shaped delivery at a pressure of approximately 40 pounds per square inch. First application should be made preferably during May or June, or as soon as flies appear.

Additional "spot" applications of spray to favored fly resting sites are suggested to supplement the initial

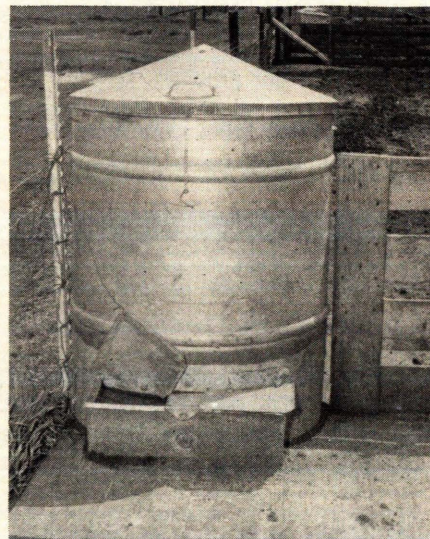


Fig. 10—Automatic waterer.

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Fig. 10—Automatic waterer.

DDT deposits. A "spot" application of 2 per cent malathion emulsion (or similar phosphate insecticides approved for general fly control) will give rapid knockdown when applied to favored fly resting areas.

Maggot sprays: Every effort should be made to prevent fly breeding by thorough weekly manure removal in yards and pens. An application of 2 per cent malathion emulsion with a sprinkling can at the rate of 4 gallons per 100 square feet will control maggots in accessible areas.

Management Tips

When flowing or piped water is not available, the resourceful feeder uses a self-waterer. The portable type shown in **Figure 10** is especially convenient for pasture use. Self-waterers may be home-built too, using a wooden barrel. One automatic watering cup should be provided each 20 pigs. An automatic waterer with two openings should be considered two cups.

The minimum capacity waterer for 10 pigs per day should be 25 gallons in the summer time and 15 gallons in the winter time. A growing-fattening pig will take $\frac{1}{2}$ to $1\frac{1}{2}$ gallons of water per day depending upon its size and the season.

The drinking water should not fall below a temperature of 35 to 40 degrees Fahrenheit during the winter.

The sanitary hog wallow or sprinkling system provides summer comfort. On larger farms permanent wallows or sprinklers can be constructed in shaded, protected places. Where only small herds are kept, the portable wallow, made of wood or light material, is well adapted to a pasture rotation program. Up to 50 pigs can be accommodated per 100 square feet of wallow.

Hogs need shade, especially when hog-lots or pastures are treeless and exposed to hot summer sun. Shelter need

not be costly or elaborate. If open on all sides, as in **Figure 12**, free circulation of air adds to comfort.

The minimum area of shelter (sleeping space) provided should be:

| | Summer Time (Shade or housing) | Winter Time (Housing) |
|--------------------------|---|-----------------------------|
| Weaning to 75 lbs. | 6 sq. ft. | 4 sq. ft. |
| 76 lbs. to 125 lbs. | 8 sq. ft. | 6 sq. ft. |
| 126 lbs. to market | 10 sq. ft. | 8 sq. ft. |

By preventing chilling the electric brooder or heat lamp saves baby pigs from death. **Figure 12** shows how newly-farrowed pigs may be kept warm and comfortable. A brooder also prevents the sow from lying on her pigs. (No guard-rail is needed if brooder is used.)

Self feed when practicable. Hogs are food-wise. For pasture use, two-way feeders are popular. Inside the barn, a one-way feeder is convenient because it saves space.

The number of pigs per linear foot of self-feeder space or pigs per self-feeder hole should be:

| | On Dry Lot | On Pasture |
|-------------------------|---------------|---------------|
| Weaning to 75 lbs. | 4 | 4-5 |
| 76 lbs. to market | 3 | 3-4 |

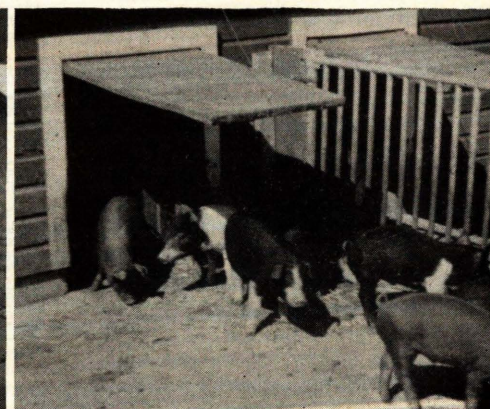
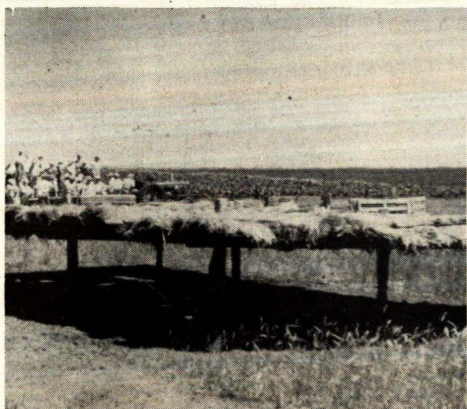
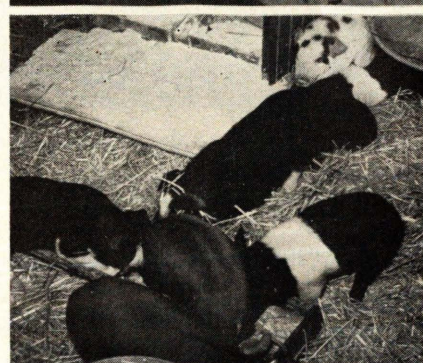
(A 10-foot self-feeder open to pigs on both sides provides 20 linear feet of feeding space.)

A growing-fattening pig may be expected to consume the following amounts of feed:

| Live weight of pig, lb. | Total daily feed, lb. |
|-------------------------|-----------------------|
| 30-75 | 2.7 |
| 100 | 5.0 |
| 150 | 6.6 |
| 200 | 7.5 |

Fig. 11—TOP: Pig given iron pill. **CENTER:** Pigs getting sunshine on clean ground. **BOTTOM:** Early creep feeding is important.

Fig. 12—LEFT: Provide shade for all pigs. **CENTER:** Electric brooder prevents chilling. **RIGHT:** Concrete feeding floor is highly sanitary.



The percentage of self-feeder given to protein supplement should be:

| | On Dry Lot | On Pasture |
|--------------------------|---------------|---------------|
| Weaning to 75 lbs. | 25% | 20-25% |
| 76 lbs. to 125 lbs. | 20% | 15-20% |
| 126 lbs. to market | 15% | 10-15% |

Three self-feeder holes, or three linear feet of mineral box space, should be allotted for 100 pigs when salt or a mineral mixture is fed free-choice.

The concrete feeding floor or platform is being used more and more. Highly sanitary, it is the answer to disease and parasite prevention; floor and pens may be scrubbed and cleaned regularly. Moreover, feed is saved. Hogs can't trample it into the ground.

For hand feeding in troughs, or for hand watering, the length of the trough per pig should be:

| | |
|--------------------------|----------|
| Weaning to 75 lbs. | .75 ft. |
| 76 lbs. to 125 lbs. | 1.00 ft. |
| 126 lbs. to market | 1.25 ft. |

(A 10-foot trough is considered to provide 10 feet of feeder space whether pigs eat from one or both sides.)

When pigs are confined from weaning to market, 15 square feet of feeding floor space should be provided per pig if

the pigs are fed from troughs and 10 square feet of feeding floor space if fed from self-feeders. This is in addition to sleeping space.

BABY PIG CARE

Build a guard rail to avoid losses from sows lying on pigs.

Keep new-born pigs warm and dry. If you have electricity, use a heat lamp. A good substitute is a bushel basket or a tub lined with straw and warmed by a jug of hot water. Gas heaters are proving popular with some breeders.

Revive chilled pigs by dipping each pig in water as warm as the hand can bear. Remove immediately, rub well with dry cloth to stimulate circulation and keep in a warm place.

After farrowing, make sure that each pig has a nipple for immediate nursing.

Ear notch pigs first day after farrowing for later identification of those out of your best sows. See how to ear-notch on page 5.

Remove needle teeth that may lacerate sow's udder, cause injuries to other pigs in litter.

Prevent "thumps" (anemia) commonly found in two to six weeks old pigs

born in February or March. "Thumps" indicate a need for copper and iron, easily supplied by (1) brushing sow's udder once daily with iron sulfate solution, (2) keeping a shovelful of clean soil in corner of pen, or (3) giving a copper and iron pill the third day, and repeating the tenth day. (4) Iron dextran is given with a hypodermic needle, a radical departure from the oral procedures in current use. A 2 c.c. dose of iron dextran, injected intramuscularly, will carry pigs through the early weeks of the suckling period, when anemia and associated ailments take a heavy toll. April or May pigs, if allowed to run outdoors, are less likely to develop "Thumps."

Feed young pigs in a "creep," both on pasture and dry lot. Creep-feeding is economical, keeps sows out of young pigs' feeding place.

Castrate as early as 10 days to four weeks. When pigs are young and small, less work and effort are required.

Check lice and mange mites that keep pigs from growing thriftily. Spray or dust with benzene hexachloride.

Check losses from worms by using a worm expellent.

Fitting and Showmanship

A Good Showman:

1. Is aware that the primary purpose for showing an animal is to assist the animal in making a favorable impression on the judge.

2. Makes sure that both himself and his animal are clean and well groomed.

3. Has the feet of his animal trimmed to permit him to stand and walk correctly.

4. Brings his animal into the ring promptly. He makes it his business to find out when the class is to be judged.

5. Is alert and follows instructions issued by the judge, clerk, or ringmaster explicitly.

6. Is courteous at all times, particularly to the judge and competing showmen.

7. Is prepared to give a prompt answer to any question pertaining to his animal.

8. Gives his animal his undivided attention while in the ring. Smoking at such times is a breach of etiquette.

9. Always knows the whereabouts of the judge and has his animal in position when the judge looks in that direction. If two or more judges are working the ring, the showman knows the whereabouts of all of them.

10. Never permits his body to obstruct the view of the judge.

11. Endeavors to maneuver the animal into an improved position for the benefit of the judge's inspection prior to, not during, the inspection.

12. Executes all showmanship endeavors in a nonchalant manner. The animal is made to appear to be showing himself. Grandstand or clown acts by the showman are very improper.

13. Looks with pride upon his animal and by his silent, confident attitude attempts to impress the judge with his animal.

14. Never points to any part of his animal with intent to draw attention to a strong feature. Rather, he makes it convenient for the judge to see such features well and frequently.

15. Never engages in any attempt at bribery or makes any comment to the judge about his competitor or competitor's animal.

16. Avoids having his animal come in contact with a competitor or encroach upon space rightfully in possession of another.

17. Is a modest winner and gracious loser. Winners of runners-up honors al-

ways offer congratulations to first prize or championship winners.

18. Does not leave the ring until the class is placed and records completed. Retirement from the ring takes place in the order of the placing of the class.

TRIMMING THE FEET:

Look over the feet of pig three and four weeks before the show. Of our meat animals, swine have the smallest feet in proportion to body weight. Animals being fitted do not wear off the feet as do animals on range.

Trimming the feet can best be done a few hours after a rain or after the pigs come off pasture wet with dew. The hoof tissue is much softer then. Usually one person can hold a spring pig while another does the trimming with a hoof parer, pruning shears, or pocket knife.

Do all the trimming on the bottom of the foot by removing what might have worn off in travel over a rough, hard surface. Cut from the inside through the outer wall and work from the heel of the foot, or cushion, forward to the tip of the toe. Treat the dewclaws in the same way to give them the appearance of good proportion.



Fig. 13. Trimming the feet.

If done not too long before the show, there will be no need to repeat the trimming, and there will be no danger of lameness due to sore feet. Neglected feet increase the strain on the pasterns. Long toes break easily, causing lameness. The carriage of pigs on well-shaped feet is much more graceful.

WASHING THE PIG:

The skin should be sound and healthy. Mange causes thickened areas on the skin, while lice may cause injuries due to the pig's severe scratching. When mangy pigs are washed, rough, reddened, sore patches show up on the white skin. This is very noticeable and

objectionable. A good washing is desirable two or three weeks before the show. Then wash again several times before the show.

White and colored skins are treated differently. With white-skinned pigs, or large white areas on pigs of some breeds, vegetable or mineral oil may be used generously a day or so before washing to soften the scurf.

Vegetable oils are usually high in price; castor oil is too heavy and cottonseed oil too gummy. Mineral oils cause white hair to become yellowish, but for

colored skins the mineral oils such as paraffin oil or engine oil are satisfactory. Crankcase or drain oil may be poisonous if it comes from a motor burning leaded gas.

In washing use a stiff brush and enough soap to get a good lather. In finishing, rinse well to remove all soap. Keep the pigs on a clean surface after leaving the wash rack and have clean, dry bedding in their pen to receive them. Prairie hay or straw makes the most satisfactory bedding for it is usually clean and quite free from chaff.

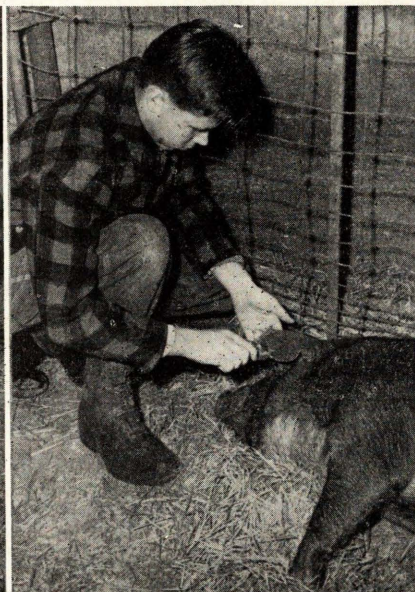
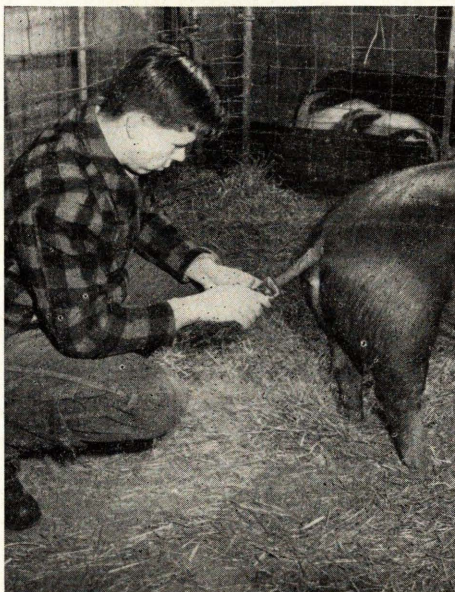


Fig. 14. Hair of the ears and tail may be clipped.

CLIPPING:

The hair from the ears and tail of a pig may be trimmed, although it is not done as much as formerly. Clip the ear inside and out, and the tail except for the switch. Some showmen start clipping about one third of the length of the tail above the switch. Blend carefully into the body.

HAIR DRESSING:

The skin of a hog is naturally dull but the hair should have a gloss, suggesting natural luxuriance. The dullness of the skin should be preserved unless hot weather makes use of the water sprinkler necessary. A soft cloth oiled just enough that oil cannot be squeezed out, is used in preparing pigs with colored skins. After all chaff has been removed by brushing, use the clothing in going over the pig, stroking with the hair to remove dust and to give the coat luster. There should never be enough oil to cause two hairs to stick together.

Alcohol may be used to thin the oil. Sometimes kerosene is used but there is



Fig. 15. Use a stiff brush and soap for washing.

some danger of blistering where the skin is thin. The old practice of putting lamp black in oil is outmoded, as lamp black comes off on everything a pig comes in contact with.

Pigs should be clean and free from surplus oil. In interbreed contests it is unfair to soil the neat appearance of another exhibit.

White skin on swine calls for different treatment. Assuming the pig is in a clean pen and clean at show time, he may be dusted with powdered soapstone or talcum powder (a very little marine blue may be added). Brush well to distribute the powder evenly, and avoid using too much powder.

TRAINING PIGS:

Begin by driving pigs slowly, or rather by herding them, in morning or evening before feeding. When a single pig is taken out to train, that pig should be familiar with the herdsman and have no fear of abuse. Work with the pig before feeding time. A hungry pig expects some reward for yielding—a satisfied pig expects none. Turn the pig out on strange ground where the pig sees nothing familiar but the herdsman. Use the same methods in handling pigs that are to be used later in the show ring.

EQUIPMENT:

Since clipping the hoof and trimming probably have been done, equipment for these jobs may be left at home when going to the fair. But, plan to take panels for a feed pen, feed trough, water pail, feed pail, cane, soap, brush and cloth, hair dressing and short handled fork or shovel, feed and bedding.

TRANSPORTATION:

Consider season, length of trip and roads in planning and providing transportation. Handle pigs to prevent injury. Avoid crowding. In hot weather take every precaution to avoid overheating. Provide shade, ventilation, and wet sand for bedding.

AT THE SHOW:

Swine pens at the fair are for exhibition of swine. Take pigs outside some distance away for feed and water. Exercise pigs morning and evening at the fair. Keep the pens well bedded, dry and clean. Feed regularly and on time so that the pigs will not squeal everytime someone rattles a pail. Pigs fed and watered regularly outside, and exercised afterward will keep their pens surprisingly clean.

A GOOD PIG SHOWMAN:

1. Makes no attempt to part or curl the hair on his pig. The hair is groomed to lie in its natural direction.

2. May remove the hair from the base to the switch of the tail and both inside and outside of the ears. (It is not necessary, however, to clip or shave the hair from either the tail or ears. Gilts, sows and barrows look more refined when clipped.)

3. Dust white pigs with a white powder.

4. Applies just enough oil on red or black pigs to give their haircoat a glossy appearance.

5. Uses oil on the black areas and powder on the belt of Hampshire pigs.

6. Uses a light application of a transparent oil on Spotted Poland China pigs.

7. Often carries a powder can, brush, or oily rag into the ring, but keeps them in his pocket or otherwise out of sight most of the time.

8. Realizes an open area 20 feet from the judge provides a better place to show a pig than a crowded area within several feet of the judge.

9. Shows his pig at a slow walk as he looks best while on the move.

10. Brings his pig to an immediate halt if the judge indicates a desire to inspect him at a standing position.

11. Permits his pig to stand for brief moments if he remains alert and does not assume an awkward position.

12. Makes no attempt to place his pig's feet by handling them.

13. Keeps his pig within a clear view of the judge.

14. Uses a light stick or cane to direct the pig about the arena. The pig responds to light taps from or the mere sight of such a show stick.

15. Uses a small, light panel instead of a cane or stick if the ring is crowded or the pig is known to be a scrapper.

16. Uses a light whip instead of a cane or stick if the ring is large and not crowded. Some pigs show best this way.

17. Never carries both a panel and a cane. One hand is left free.

18. Never forces his pig to make abrupt turns in the show ring. He does not permit him to walk into a spot that makes it necessary to back out.

19. Makes no effort to improve the arch of a pig's back by pushing its nose down or rump forward. Actually, such tactics make the pig look worse.