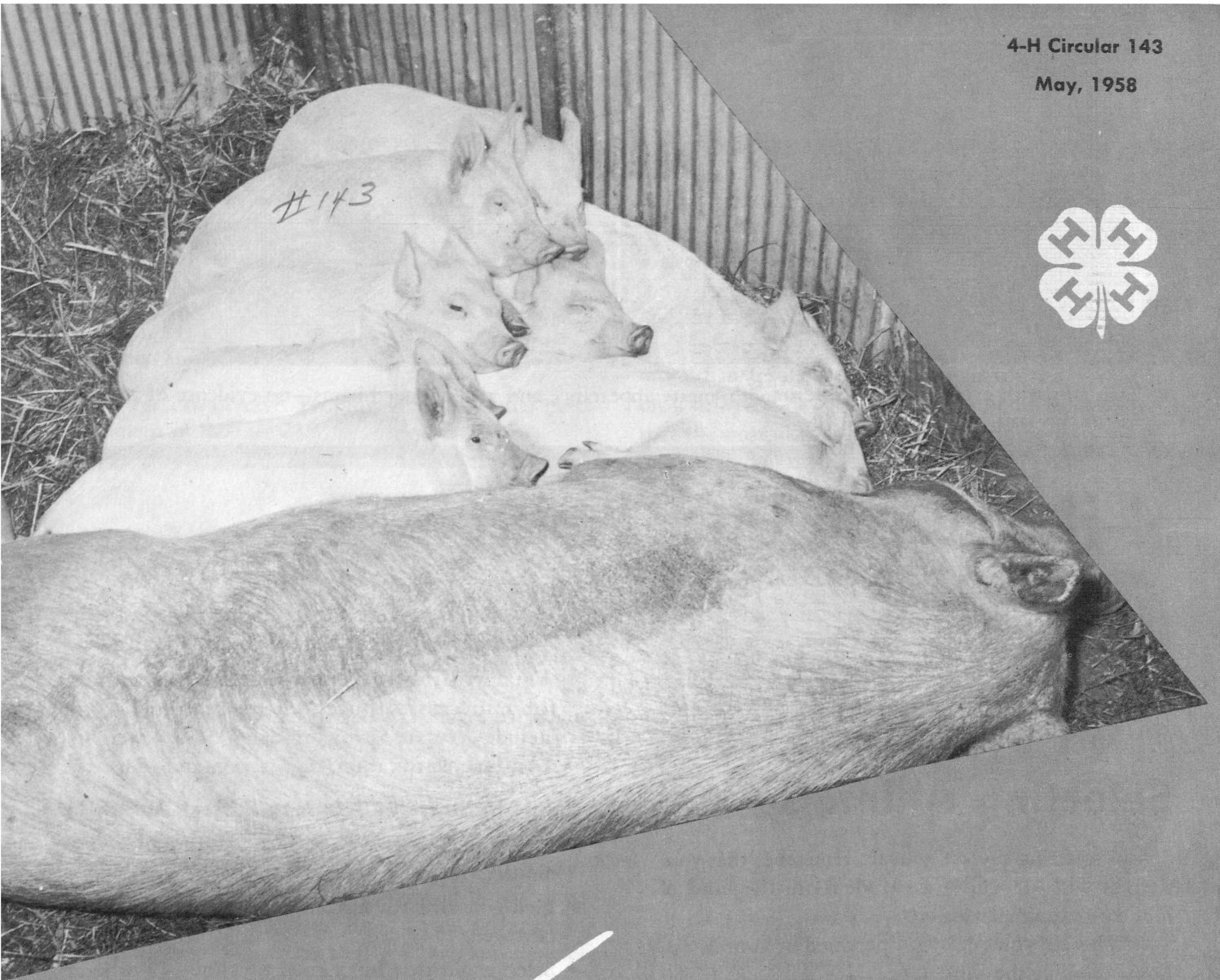
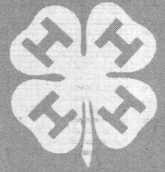


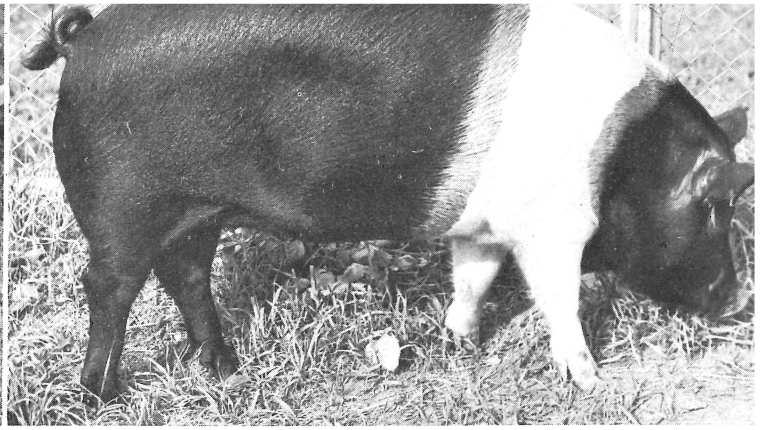
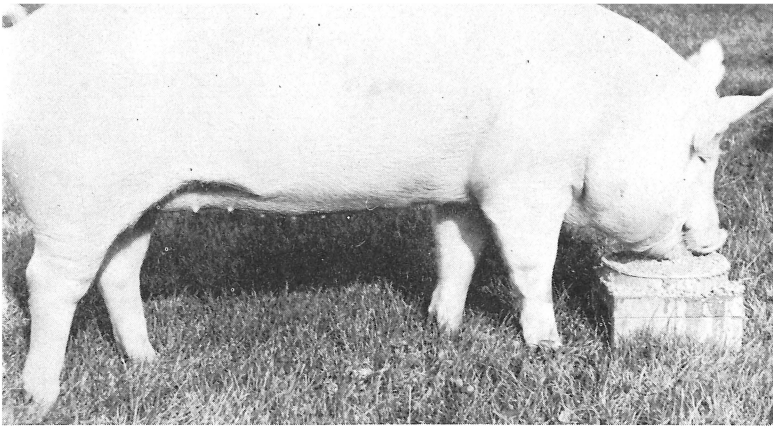
4-H Circular 143

May, 1958



SOW *and* **LITTER**

UNIVERSITY OF MISSOURI
COLLEGE OF AGRICULTURE AND THE
UNITED STATES DEPARTMENT
OF AGRICULTURE COOPERATING
J. W. Burch, Director, Agricultural Extension
Service. Distributed in furtherance of the Acts
of Congress of May 8, and June 30, 1914.



Two gilts with excellent type. Note smooth, meaty appearance and well rounded hams—no evidence of waste fat in this pair.

4-H Sow and Litter Project

Your sow and litter project, with good care and management, can be profitable. Experience gained in selecting, feeding, and managing hogs is also valuable. This project gives quick returns and does not require a large investment.

Selecting Animals

In selecting project animals, remember that your success will depend a great deal on the kind of foundation animal you buy.

Whether you decide on purebred or commercial hogs, produce the meat type.

Before deciding to raise purebred breeding stock, ask yourself these questions:

- Is the purebred business adaptable to our farm? On some farms, facilities—such as fencing

and enough pastures for separating gilts and boars—are not available or cannot be made available.

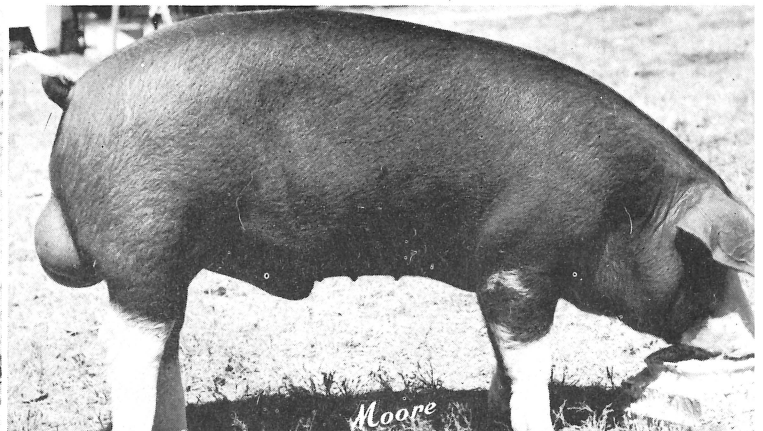
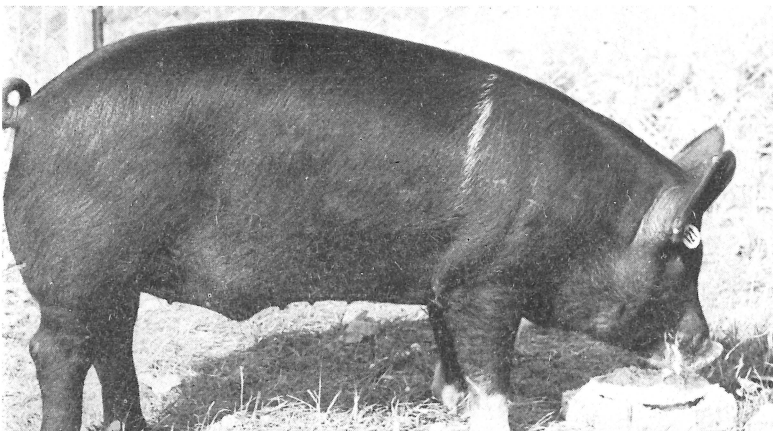
- Am I willing to keep the records necessary for a successful purebred business? This will include accurate farrowing dates, 56-day weights, meat-type certification, registration and transfers.

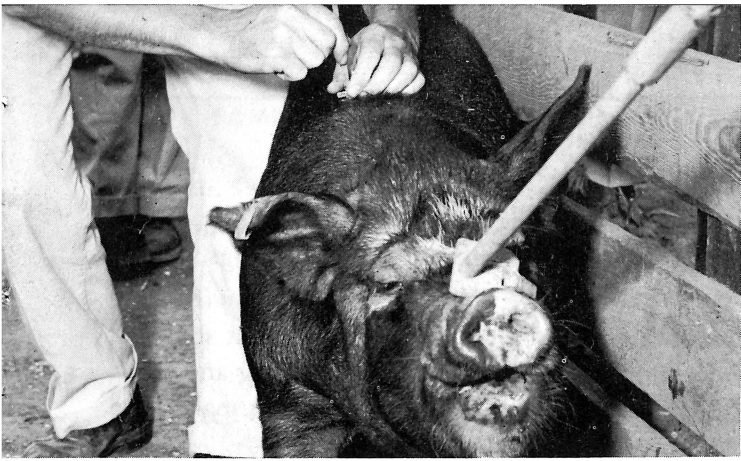
Points to Stress in Selecting Project Animals

- Pick gilts that weigh at least 200 pounds at 6 months of age.
- Pick gilts that come from large litters—at least 10 farrowed.
- Select a gilt that has a good teat line—12 or more well-spaced teats.
- When buying purebreds, buy gilts from a certified litter or from a certified mating.
- Select gilts that have good hams and loins, trim

Excellent barrow—length 31.2 in.; backfat 1.1 in.; loin eye area 6.11 sq. in.; and weight, 200 lb.

A good meat-type boar.





The eye can deceive. Probing gives an actual measurement of fat.

jowls, and no wrinkles. Avoid the gilt with countersunk tail. Sound feet and legs are important—see that the gilt stands up on her pasterns. Pick gilts that have no more than 1.5 inches backfat at 200 pounds, after having been on a full feed of corn and supplement.

Probing for backfat: Backfat can be measured on the live hog. Measurements should be made at around 200 pounds while the hogs are on a full feed of corn and supplement. The amount of backfat is an indication as to the meatiness of your hogs. Probe replacement gilts, boars that you buy, and some of your hogs that are ready for market.

(See Folder 46 for instructions.)

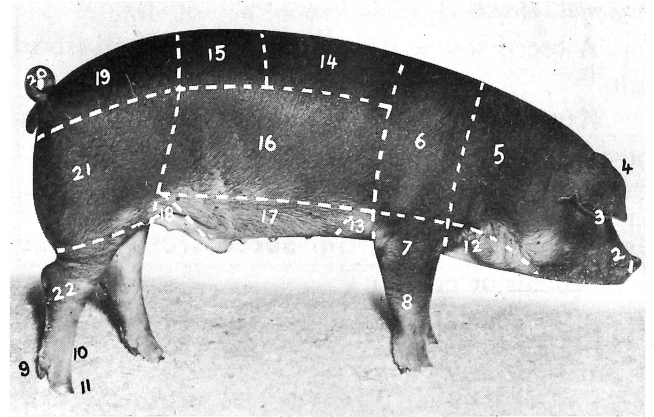
- Your gilt at 200 pounds should have length of 29 to 31 inches from the first rib, which is well forward in the shoulder, to the aitch bone which is about halfway from front to rear in the ham.
- If you are buying a grade gilt, buy one from a herd that is doing a good job of producing meat-type hogs. Where possible, also buy from a herd owner who follows a program of selection based on litter size, weight at 56 days, backfat thickness, and weight for age or rate of gain.
- Buy gilts from farmers who are following a good disease prevention and sanitation program with their herds.

Boars

In addition to good gilts, good purebred boars will have to be used. Where possible, buy *production-*

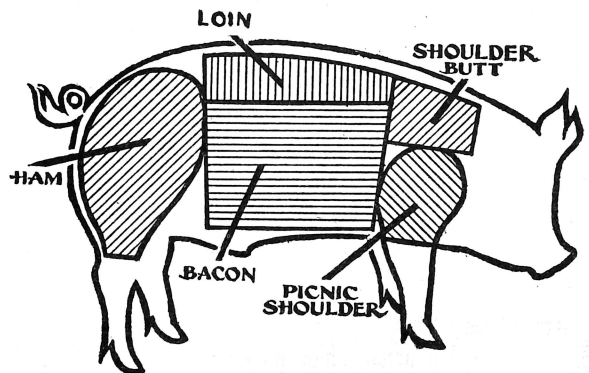
tested boars that have good performance records, high rate of gain, and good feed efficiency. They should be out of big uniform litters and have good conformation, including sufficient length, good hams and loins, sound feet and legs, and a low backfat probe.

A backfat probe can also be used as an aid in the selection of a boar. Buy a boar that probes no more than 1.3 inches at 200 pounds when it has been on a full feed of corn and supplement. Remember that the boar also has to be a good-doing hog, must be from a good litter and must have good hams, loins, feet and legs and good length.



The Parts of a Hog

1—snout. 2—face. 3—eye. 4—ear. 5—neck. 6—shoulder. 7—foreleg. 8—knee. 9—dew claw. 10—pastern. 11—toes. 12—jowl. 13—fore flank. 14—back. 15—loin. 16—side. 17—belly. 18—rear flank. 19—rump. 20—tail. 21—ham. 22—bock.



Location of Standard Pork Cuts

Note the relation of the location of the retail cuts of pork to the parts of the live animal. Increasing the percentage of the cuts shown in shaded area and decreasing the proportion of fat, shank, jowl and trimmings shown in the white area will increase the value of the live hog as well as the carcass. Keep this thought in mind in evaluating animals.

Breeding Program

If You Are Raising Commercial Hogs—

Follow a crossbreeding program. This consists of using boars of two or three breeds and saving back the good crossbred gilts for replacements.

With crossbreeding you can expect to—

- raise more pigs per litter,
- have pigs grow faster,
- reduce feed cost, and
- have pigs reach market weight of 225 pounds two weeks earlier.

How to Crossbreed.

Example, Breeds A, B, C:

A breed sow x B breed boar → AB crossbred gilt.

AB crossbred gilt x C breed boar → ABC crossbred gilt.

ABC crossbred gilt x A breed boar.

To Make Your Program Successful (Whether purebreds or grades)

- Follow a definite breeding plan.
- *Record farrowing dates.*
- Earmark pigs.
- Weigh at 56 days.
- Select replacement gilts that: (1) weigh at least 200 pounds at 6 months; (2) come from good litters, eight or more weaned; (3) have 1.5 inches or less of backfat at the 200-pound weight; and (4) have good conformation.

Size and Age To Breed.

Breed gilts when they weigh around 225 to 250 pounds, at 7 to 9 months of age, and are in the second or third heat period.

Breed to farrow in January or February and July or August, so pigs will get to market when it tends to be at its peak. (The period from breeding to farrowing is 112 to 115 days.)

Have gilts and sows gaining in weight at the time they are bred. Breeding on the first and second day of the heat period tends to increase litter size.

Breed twice during heat period.

Keep record of breeding dates.

Ration for Bred Gilts

The ration fed from breeding to farrowing has

a great deal to do with the number and size of pigs farrowed. It also influences number of pigs weaned and the milking ability of the sow.

Green Feed: Good pasture is an excellent source of green feed. All pastures need to be young and growing to be useful for hogs. The following make good pasture:

- Alfalfa or ladino.
- Red clover.
- Small grain (barley, wheat, and rye).
- Permanent grasses (bluegrass, brome, timothy, and orchard grass).

When green pasture is not available, use alfalfa meal, ground green leafy alfalfa or lespedeza hay, or alfalfa and lespedeza hay as a part of the ration.

Protein: Sources are soybean meal, fish meal, dried milk, tankage, meatscraps, linseed meal, and good commercial feeds.

Minerals: Feeding-limestone and salt are all that hogs need when they are being fed a good ration. Trace mineral salt can be used in this mixture. A suggested mixture is equal parts limestone and salt.

Grain: Corn, milo, barley, oats. The tendency is to feed too much grain, thus getting sows and gilts too fat.

Gilts should gain 75 to 100 pounds during gestation.

SAMPLE RATION FOR BRED SOWS AND GILTS IN DRY LOT

Protein Supplement Mixture

Mixture: 100 lb. alfalfa meal + 200 lb. soybean meal + 100 lb. tankage.

(The alfalfa meal can be replaced with bright green alfalfa or lespedeza hay fed in a rack, or ground and mixed with the soybean meal and tankage.)

Amount of this mixture to feed per day—

Sows: $\frac{1}{2}$ to $\frac{3}{4}$ lb. Gilts: $\frac{3}{4}$ to 1 lb.

Grain

Corn and Oats

Amount to feed per day:

Sows—1 to $1\frac{1}{2}$ lb. per 100 lb. body weight

Gilts— $1\frac{1}{2}$ to 2 lb. per 100 lb. body weight

SAMPLE RATION FOR BRED SOWS AND GILTS ON PASTURE

Protein Supplement

Mixture: 200 lb. soybean meal + 100 lb. tankage.

Amount of this mixture to feed per day—

Sows: 1/4 to 1/3 lb. Gilts: 1/2 to 3/4 lb.

Grain

Feed the amount of corn, oats or both needed to keep animals in good condition. (They should gain 75 to 100 pounds during their 112 to 115 day gestation period.)

Sample—Complete Mixed Ration

350 lb. ground oats + 75 lb. soybean meal + 25 lb. tankage.

Amount to feed per day:

Gilts: 2 to 3 lb. per day.

Sows: 2 to 3 lb. per day.

Feed ear corn to both sows and gilts, if necessary to keep in condition.

Self-feed mineral mixture of limestone and salt.

How to Feed Bred Sows

Hand feeding is the most satisfactory way of feeding bred sows and gilts. The condition of the sows can be watched better and feed costs are less.

Self-Feeding Bred Sows and Gilts

Bred sows and gilts can be self-fed but care must be taken to keep them from getting too fat. Rations may have to be changed, depending on the sow's condition. Take care that sows do not get too fat. If they do get too fat, reduce the corn and increase the oats and alfalfa. If they are too thin, increase the corn.

Sample Ration for Self-Feeding (12 to 15% Protein)

Ground ear corn	300
Ground oats	300
Alfalfa meal or green alfalfa or lespedeza hay	325
Soybean meal	50
Tankage or meatscraps	25

Care From Farrowing to Weaning

Clean Up Farrowing Quarters

Reduce chances of pigs picking up disease and parasites by cleaning and disinfecting farrowing quarters. Scrape the farrowing house floor and then scrub with hot lye water—1 can lye to 10 gallons water.

Get sow used to her farrowing quarters by moving her into the house a few days before farrowing. Before moving her into farrowing quarters, scrub her sides and udder with warm soapy water to get off mud, worm eggs, etc. In extremely cold weather, brush her dry after scrubbing or simply brush her well.

Heat. If the farrowing house temperature falls below 60° F., you should figure on using some type of heat. It will save pigs. The simplest method is to use 250-watt heat lamps. To avoid fire hazard, protect the lamp with a guard; keep it out of reach of sow and 30 inches above the bedding.

Size of Farrowing Pen. Farrowing pens in a central farrowing house or individual houses should be from

Many pigs are lost due to sows stepping on them or lying on them. Guard rails in the farrowing pen will help prevent this. Construct them 8 inches above floor and 6 inches out from wall.

50 to 65 square feet in size. This means a 6 x 8 or 8 x 8 individual house or pen.

An individual house that can be moved to clean ground will be an excellent piece of equipment for your first sow or gilt.

Bedding. Use straw, shavings, or ground cobs—just enough to keep the house dry.

Feed at Farrowing Time

Avoid making any drastic changes in the ration prior to farrowing.

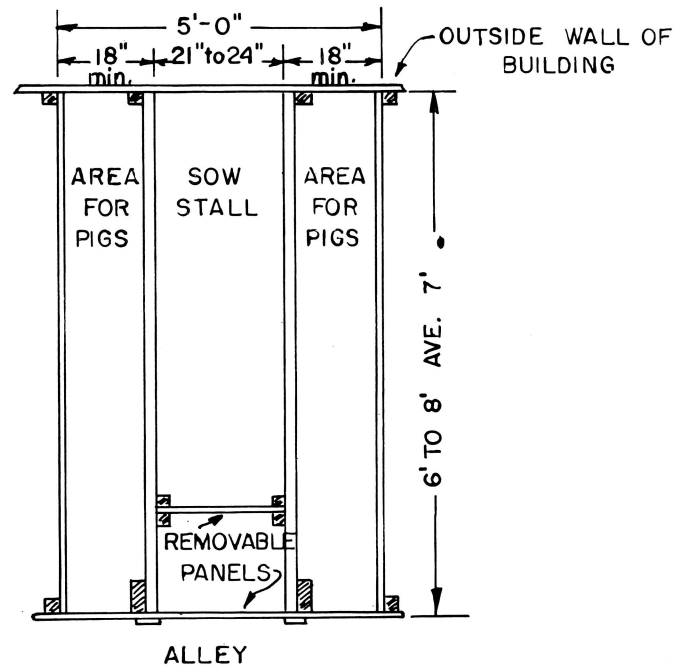
Give the sow all the water she will drink after farrowing. If she seems to be hungry and restless, feed her a pound or two of a bulky feed such as bran or ground oats for the first 24 hours.





Farrowing stalls are popular. They help save pigs. The stalls pictured, above, can be set up and then dismantled when not in use. Stalls may also be used in individual houses. Size: 6 to 8 feet long, 20 to 22 inches wide.

Turn the sow out of the stall each day, after the first two or three days, for feed, water, and exercise.



Slowly increase the feed until she is back on full feed in ten days to two weeks time. Increase the feed gradually—this will help prevent udder troubles, nutritional scours, and other difficulties.

If the sow fails to come to her milk, call a veterinarian. In some cases he may be able to give her a hormone injection that will start the milk flow.

Treatment of the Newborn Pigs

Clip needle teeth within the first 12 to 24 hours. These small sharp teeth, four on each side, some-

times cause injury to the sow's udder and to the pigs when fighting each other. Cut off with sharp side-cutting pliers. Avoid leaving any sharp edges or breaking them off in gums.

Earnotching is used to identify sows and their pigs. This should be done within 24 to 36 hours after farrowing.

Mark all pigs in the litter with the same notch or give each pig an individual number. For pure-breds follow the system suggested by the breed.

Feeding the Sow and Litter

When the sow is back on full feed she will be eating about 3 or 4 pounds of feed for each 100 pounds live weight. This can be made up of all the corn she will eat plus 1½ pounds daily of a supplement such as:

- 200 bean meal
- 100 tankage
- 100 alfalfa meal

If self-feeding is practiced a ration such as the following can be used:

Ground shelled corn	650
Ground oats	250
Soybean meal	50
Tankage	25
Alfalfa meal	25
	<hr/>
	1000

This ration may be fed by hand, giving the sow 4 or 5 pounds of the oats and protein plus all the corn she will eat.

Anemia.

If pigs are kept on concrete, wood, or very hard dirt floors for the first two to four weeks, they will develop anemia and may die.

This can be prevented by injecting an iron compound into the pig during the first 2 or 3 days—or any one of the following methods can be used.

- (1) Keep clean loose dirt in the pen.
- (2) Paint the sow's udder each day with an iron sulfate (copperas) solution so that the pigs will get the iron they need while nursing. Mix 1 pound iron sulfate to 3 quarts water.
- (3) Give iron pills to pigs at regular intervals.

Creep Feeding

Pigs will start eating when they are ten days to two weeks old. At this early age they make very efficient use of feed. Feed a creep ration; use either a special creep feeder or build a creep. Locate it where sows and pigs tend to spend a lot of time. Feed until pigs weigh up to 50 pounds.

Good creep rations can be purchased or they can be mixed by the feed dealer according to formulas suggested below.

TWO SUGGESTED FORMULAS FOR CREEP RATIONS

	18-20% Protein	18-20% Protein
Ground yellow corn	685	520
Rolled oats	—	100
Wheat shorts	—	100
Dried skim milk	—	70
Soybean oil meal	160	70
Tankage or meatscraps	80	50
Fish meal	30	50
Alfalfa meal	25	25
Salt	5	5
Limestone	2	2.5
*Antibiotic	5.5	5.5
**Vitamin mix	+	+

*Antibiotic containing 3.6 grams antibiotic per pound.
Furnish 20 mg. antibiotic per pound of creep.

**Vitamin mix to supply vitamins A & D, riboflavin, pantothenic acid, nicotinic acid and Vitamin B₁₂

Weaning. Wean pigs at six to eight weeks of age.

Castration. Castrate at two to three weeks of age. Pigs are easier to handle and heal quicker when they are still nursing the sow.

Growing and Finishing, 50 to 200 Pounds

Concrete or Pasture.

Pigs can be raised on concrete or on pasture. Good pasture furnishes certain vitamins, minerals, and protein. These have to be included in the feed if the pigs are kept on concrete. In general, pigs will gain slightly faster and eat slightly more feed on concrete than out on good pasture. Pigs have to be kept comfortable to make efficient gains. At certain times of the year, as in the hot summer time,

these environment factors can be better controlled on concrete than out on pasture. Special provision has to be made for disposal of manure and pens have to be cleaned regularly when pigs are fed on concrete.

Floor Space Requirements:

40 to 100 lbs. — 8 to 12 sq. ft.

100 to 200 lbs.—12 to 15 sq. ft.

Grains.

Corn, milo, oats, barley. Corn and/or milo can make up the entire grain part of the ration. Milo can be substituted for corn pound for pound while barley is only 85% as valuable as corn. Oats should not make up more than one-third of the grain ration. Milo, oats, and barley need to be ground.

Protein

The protein supplement is fed with the grain to balance the ration and usually carries the antibiotics, vitamins, and possibly some minerals. Supplements can be purchased as commercial supplements or can be mixed at home or by your feed dealer.

SAMPLE PROTEIN SUPPLEMENT (38%)

	Lbs.
Tankage or meatscraps	200
Soybean oil meal	300
*Alfalfa meal	100
Shorts	100
(Salt)	20
**Limestone	20
***Antibiotic supplement	6

*Omit alfalfa meal when pigs are on good pasture or if vitamin supplements are used to provide pantothenic acid, riboflavin, B₁₂ and Vitamins A and D.

**May be self fed as a mineral mixture free choice.

***Antibiotic supplement contains 3.6 grams of the antibiotic per pound (to furnish 25 to 30 mg. of the antibiotic per pound of supplement).

Four Methods of Feeding

1. Both the grains and supplement can be hand-fed, giving the pigs the amount of grain they will clean up each day and enough of the protein supplement to balance the ration.
2. The grain part of the ration can be self-fed and the proper amounts of protein hand-fed.
3. Both grain and supplement may be self-fed in separate compartments of a feeder or feeders. The problem with this method can be that the pigs

will eat more supplement than is actually necessary to balance the ration, thus adding to the cost. You can overcome this problem by mixing some oats or extra alfalfa meal with the protein supplement.

- The grain can be ground and mixed with the supplement in the proper proportions and fed as a complete feed. The main disadvantage to this system is the cost of grinding and mixing. With such grains as barley and milo, which should be ground anyway, it is rather easy to mix them with the supplement.

Amount to Feed of Supplement Shown in Box On Page 7:

When hand feeding—

In dry lot or poor pasture:

- ¾ pound per day up to 125-pound weight.
- ½ pound per day from 125 pounds until marketed.

On good legume pasture:

- ½ pound per day up to 125 pounds weight
- ¼ pound per day from 125 pounds until marketed.

Complete rations:

If you feed a complete ration (with the grain and supplement mixed) you will need to know how much protein to mix with the grain. The percentages of protein to include for different weights of hogs are:

- Weaning to 75 lb. - 16%
- 75 to 125 lb. - 14%
- 125 lb. to market - 12%

You can get these percentages by mixing the supplement shown in the box on page 7 with grain as follows:

- 76 lb. corn + 24 lb. 38% supplement = 16%
- 83 lb. corn + 17 lb. 38% supplement = 14%
- 90 lb. corn + 10 lb. 38% supplement = 12%

SAMPLE GROWING-FATTENING RATIONS

(Weaning to 75 lb.—16% Protein)

	Ration: 1	2	3	4
Corn	76	52	—	—
Oats	—	27	—	—
Barley	—	—	87	—
Milo	—	—	—	80
Protein supplement 38%	24	21	13	20
Minerals, free choice	+	+	+	+

Drinking Water

Plenty of good clean water must be furnished hogs at all times. Freezeproof automatic waterers have proven valuable. They can be made of concrete or good commercial ones can be purchased.

Shade and Water.

Your hogs have to be kept cool and comfortable to make efficient gains. Provide shade and water in the summer time. If natural shade is not available, build a temporary shade. If you can arrange to spray the hogs with water, the combination of shade and water is more effective than just the shade alone. Low pressure spray nozzles that deliver small amounts of water as a fog or fine mist are very effective. Sanitary concrete wallows can also be used.

Parasites.

Internal Parasites. Prevention is the best way to handle internal parasites. Keep your pigs out of old hog lots and away from stagnant ponds. Keep pigs out of fields where hogs have been during the last two years.

Piperazine is a good worming agent.

Treatments for worms cannot reach the worms while they are in the lungs and other internal organs. Thus damage is often done before the treatment is given.

Hygromycin, an antibiotic, shows promise as a worming agent as well as a stimulant of gains. Feed it in the complete feed, starting as soon as pigs will eat and continuing until they weigh 50 to 60 pounds. It may also be fed to older pigs that have not received the product. Include in their feed for five to six weeks.

External Parasites. Pigs free of lice and mange gain faster and make better use of their feed. If sows and gilts are treated ahead of farrowing, usually no other treatment will be needed until the pigs are weaned. To treat, crowd the pigs into a tight place and spray with B.H.C. or lindane (use as directed). Don't use B.H.C. or lindane on pigs before they are three to four weeks old.

Diseases

Brucellosis or Bang's disease will cause sows or gilts to lose pigs. Your project animals should be tested before they are brought on your farm.

Cholera is responsible for more losses in the hog industry than any other disease. Project animals should be vaccinated against the disease before they are purchased. Vaccinate all pigs you raise. Consult your veterinarian.

Erysipelas causes losses on many farms. Consult your veterinarian for diagnosis and treatment.

Leptospirosis. A disease that causes abortion in sows, death of newborn pigs, and to some extent poor weight gains and stunting. Infected swine also serve as a source of infection for cattle, horses, and man. Consult your veterinarian for suggested control program.

See Market Pig project bulletin for suggestions on fitting and showing.