

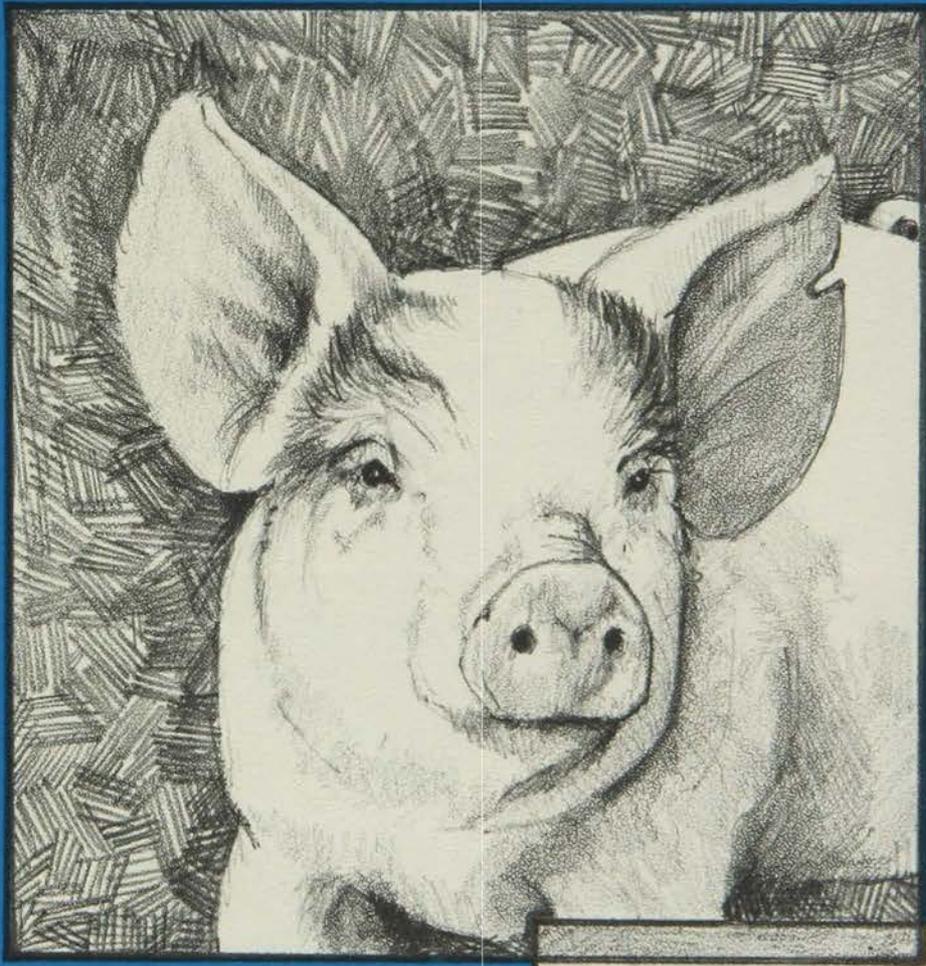
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4-H swine manual

unit 1



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4-H swine manual

unit 1

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When you start your swine project, you will become part of an industry that returns millions of dollars to Minnesota farmers each year. This manual is planned for the 9- to 12-year-old member who has a gilt or barrow project. Through reading it, you will learn:

- How to judge and select pigs for your project.
- How to feed and care for your barrow or gilt.
- How to prepare and exhibit your pig.

Answering the questions at the end of each section is not a requirement for this project, but answering them will help you remember some of the important information.

After you have taken this project for a year or two, you should progress into a more advanced swine project.

units you may choose

As a beginner in the swine project, you may choose either the market pig or gilt unit. Requirements for completing these units are listed elsewhere. The date

after which a pig must be farrowed to be eligible for your county show usually is January 1 for gilts and February 1 for barrows. Check with your extension agent for the date in your county.

MARKET PIG FEEDING

In the beginning project you should feed and care for a pig that will be marketed. To gain added experience you should follow your pig through the marketing process.

1. Feed at least one barrow or market gilt.
2. Your pig must have been farrowed after February 1 of the current year.
3. Begin keeping records when you obtain your pig.
4. You have until June 1 to enroll. (Check your county requirement.)
5. Weigh your barrow between May 10 and June 10. (Check your county requirement.)

GILT

In this project you should feed and care for a gilt that will be used for breeding purposes.

1. Feed and care for at least one purebred, grade, or crossbred gilt. If the gilt is purebred, register her in your name.
2. Your gilt must have been farrowed after January 1 of the current year.
3. Begin keeping records when you obtain your gilt.
4. You have until June 1 to enroll. (Check your county requirement.)

other things you can do

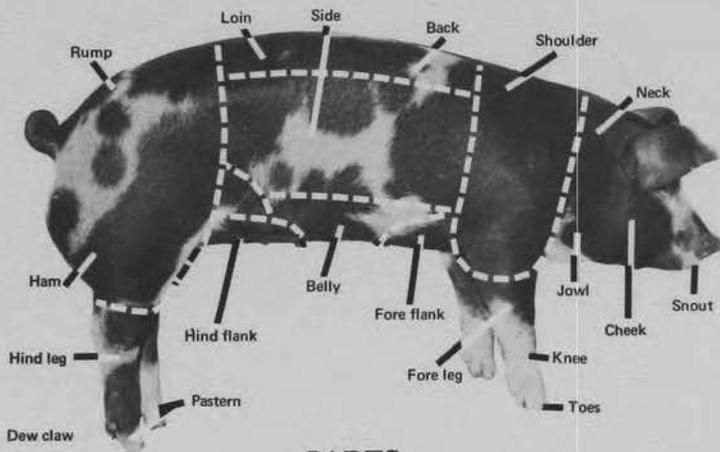
1. Learn all you can about pigs by studying this manual and by talking with your parents, other 4-H members, and your club leader.
2. Visit a hog market.
3. Attend a purebred hog sale.
4. Learn all the parts of a hog from the drawing on page 4.
5. Learn to talk like a pork producer by knowing the meanings of the words on page 4.
6. Attend your county 4-H livestock judging workouts.
7. Give a talk on some part of your project at a club meeting.
8. Give a demonstration on some part of your project at a club meeting.
9. Show your pig at the county 4-H show or on a project tour.
10. Attend the 4-H Market Livestock Show, watch the 4-H State Fair Swine Show, or see the open class swine show at the State Fair.

topics for demonstrations or talks

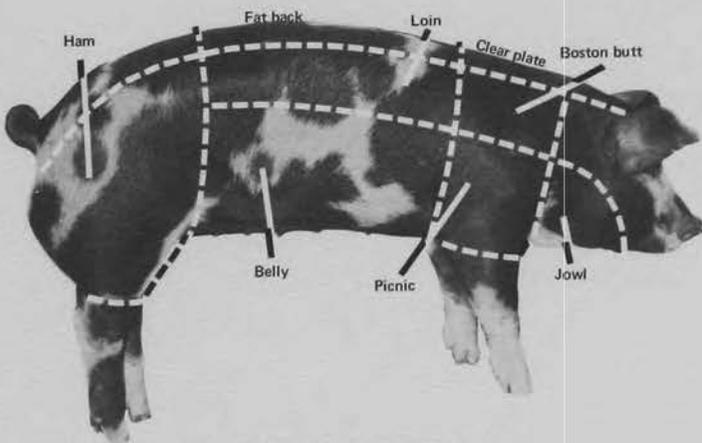
Plan to give a talk or demonstration at a club meeting. Either activity will help you develop self-confidence and the ability to organize your ideas. Your 4-H leader will assist you. Several possible topics are listed below. The questions at the end of each section also will suggest ideas for talks or demonstrations.

- How to select a barrow or gilt.
- The differences between swine breeds.
- How to make a balanced swine ration.
- The parts of a hog.
- How to control parasites.
- How to prepare for the 4-H show.
- How to show a barrow or gilt.
- What I learned from my swine project.

parts of a hog



PARTS



WHOLESALE CUTS

words hog producers use

- barrow—male pig that has been castrated before reaching breeding age.
- boar—male pig or hog.
- breed—a group of animals with similar external characteristics (color markings, type of ear, type of snout, etc.) that are passed on from generation to generation.
- crossbred—a pig or hog from purebred parents or high-grade parents of different breeds.
- farrow—give birth to young.
- gilt—female pig that has had no offspring.
- hog—swine older than 6 months.
- litter—offspring produced at one farrowing.
- pedigree—a record of an animal's ancestors.
- pig—small or young swine of either sex, usually under 6 months old.
- purebred—a pig or hog whose parents are of the same breed and are recorded with a swine registry association.
- sow—female hog that has farrowed a litter of pigs.
- wean—to take pigs away from their mothers. Some breeders wean pigs at 3 weeks, but 5 to 8 weeks is most common.

Questions to Answer

1. What are the requirements for the unit in which you are enrolled?
2. What is the difference between purebred and crossbred hogs?
3. What is the difference between sows and gilts?

some facts about swine in minnesota

Almost 6 million hogs are raised in Minnesota each year. The majority of these hogs are finished for market on the farms where they are born. However, in certain areas of the state, feeder pigs are produced where pigs are born and raised to weaning on one farm and finished for market on another.

Minnesota usually ranks fifth in hogs produced in the United States. Iowa leads in numbers of swine produced.

Most hogs in Minnesota are fed a ration made up largely of corn and protein supplement. Other grains such as barley and oats make good feed and are fed in the northern part of the state. The main feeds fed to swine in southern Minnesota are corn and soybean oil meal.

When hogs weigh about 200 pounds, they are sold to a meat packing or slaughter house. The meat from hogs is called pork. About a third of the meat eaten in this country is pork. On the average, each person in the United States eats about 65 pounds of pork each year.

Pork is sold as fresh pork (pork chops, pork steak) or cured pork (ham, bacon, smoked sausage). Cured pork is treated with a mixture of salt, sugar, and certain spices, and then smoked. Curing helps keep pork from spoiling and also adds flavor.

You may hear some people call hogs “mortgage lifters.” This is because many farmers have raised hogs to help pay off their farm debts.

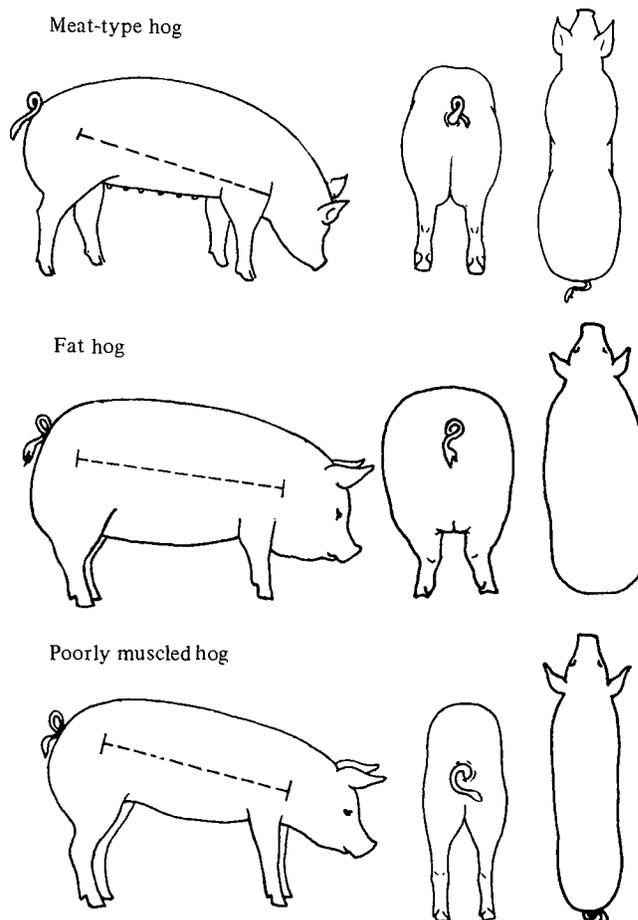
Questions to Answer

1. What are the parts of a hog in front of its shoulder?
2. What state leads in number of swine produced in the U.S.?
3. What two feeds are most Minnesota hogs fed?
4. What is the difference between fresh pork and cured pork?
5. How many hogs are raised in Minnesota each year?

selecting your barrow or gilt

Since you are a beginner, you will want to ask someone with experience to help you pick out your pig. This person could be your parent, a purebred breeder, county extension agent, vocational agriculture teacher, or club leader.

Swine are usually selected on the basis of form, production, and pedigree. Form is the general outline or shape of an animal. Production is judged by



the weight and number of pigs in the litter from which a pig comes, and is most important in selecting a gilt. Pedigree is information about the parentage of the pig and important primarily in choosing a purebred gilt.

FORM OR GENERAL OUTLINE

Look for a pig that is long, has legs of medium length, is medium in width, and is muscular across the back. The widest part of the pig should be through the center of the ham when viewed from the rear. The legs should be set well apart, have medium sized bones, and have moderately sloping pasterns.

The pig should appear muscular, not flabby or fat. Avoid pigs that are short, wide and flat on top, and stand with their legs together rather than wide apart. Also avoid pigs that are thin, light-boned, and narrow through the ham.

When choosing a pig, ask yourself these questions:

Is the pig long and trim?

Does it have a heavy, deep, meaty ham?

If it is a gilt, does it have at least 6 nipples on each side? Are the nipples prominent and sound?

Are the legs wide apart? Are the pasterns strong?

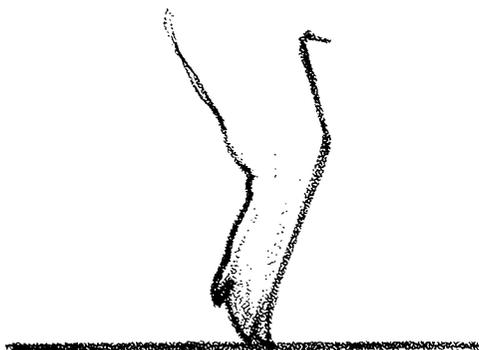
PRODUCTION

Whether you select a barrow or gilt, ask about the litter weaning weight. An 8-week-old litter farrowed by a gilt should weigh about 275 pounds. An 8-week-old litter farrowed by a sow should weigh at least 320 pounds. Many good producing sows farrow litters that weigh much more than 320 pounds. If the litter weaning weights are not available, be sure that the pig comes from a litter in which eight or more pigs were farrowed and raised.

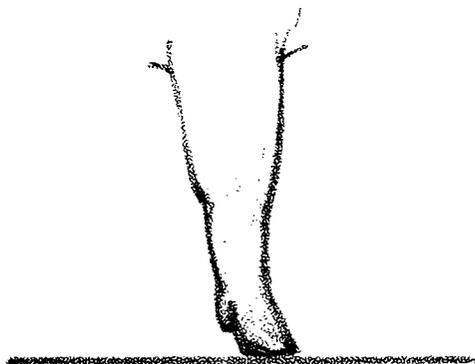
After you have learned the size and weight of the litter, find out all you can about the growth rate and carcass characteristics of closely related pigs. Ask the breeder if he has run any slaughter tests on relatives of the pig you are buying or has evaluated pigs in the New Ulm Central Swine Evaluation Station. Ask the breeder about his on-the-farm performance records, then evaluate each pig's growth rate and backfat information. Consider all information available before you make your selection.

Good pigs will produce carcasses that are more than 29.5 inches long, have 1.4 inches or less backfat, and have loin eyes that are 4.5 square inches or more in size. If the pig you buy had several close relatives that produced meaty carcasses, he probably also will become a meaty, muscular hog.

If you select a gilt for breeding, make sure that she came from a large litter farrowed by a sow that is a good milker and mother.



Bowed knee and too steep pastern, too small toe.



Strong leg, moderate slope to pastern, even uniform, medium size toe.



Weak pastern, too long pastern and toe.

PEDIGREE

A pedigree is not important if you are choosing a pig for a market pig project because you probably will sell him after you have finished the project. But in selecting purebred swine, give some thought to the pedigree and performance record. Although animals from little-known bloodlines have been used in many excellent 4-H projects, the chances of producing an outstanding animal are improved with superior performance records.

A pedigree usually goes back two generations and sometimes further. If an outstanding pig is listed in a pedigree, its name should appear in the first or second generation. If the name is any further back, it probably won't have much effect on the pig you are considering.

Questions to Answer

1. What is a good weight for a litter of pigs raised by a sow?
2. How many nipples should a gilt have?
3. What should you look for in the general outline of a pig?

feeding your growing pig

It is a little harder to feed swine than to feed either sheep or beef cattle. A balanced ration isn't any more important for swine than for other animals, but you must be more careful to provide swine with everything they need.

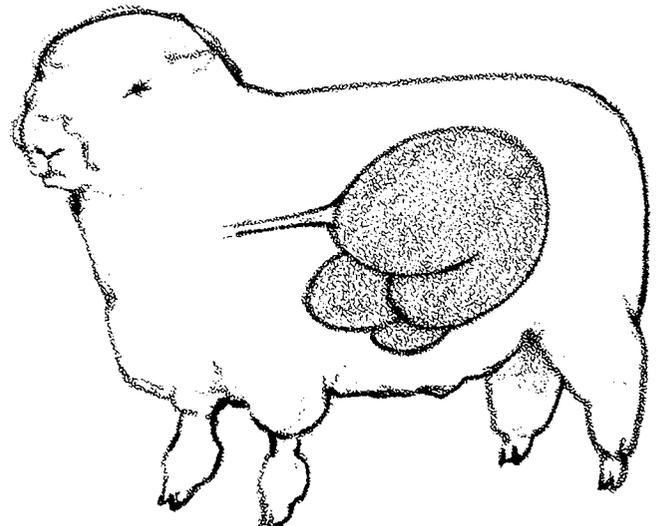
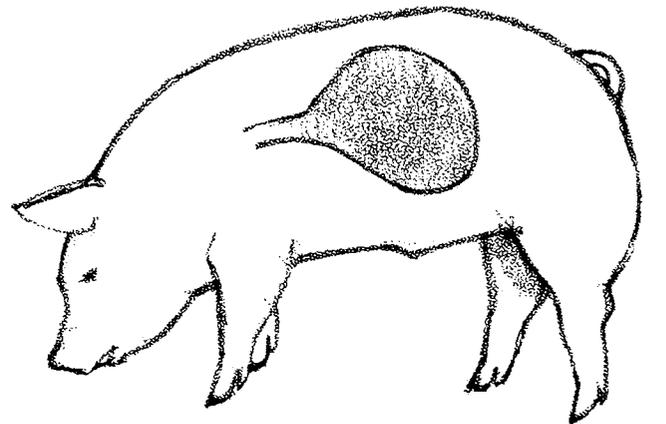
Sheep and cattle have four parts to their stomachs and can eat large amounts of hay, and other roughage that will provide vitamins, proteins, and minerals. The stomachs of sheep and cattle also contain bacteria that produce certain necessary B vitamins.

The pig has a simple stomach. He can't digest much roughage, and his stomach does not produce the required amounts of B vitamins. These vitamins must be provided in his feed.

A pig requires a mixture of protein, vitamins, and minerals in addition to its grain ration. These mixtures usually are called protein supplements. Some protein supplements also will include an antibiotic that may improve the growth performance of your pig.

CORN

Corn makes up the largest part of the ration fed to most Minnesota swine. It is one of the best energy feeds available, but, like all farm grains, it is low in protein, minerals, and some vitamins. For this reason, corn or any other farm grain should not make up the entire ration. Feed a good protein supplement with the grain.



OATS

Oats contain more bulk than pigs can use and should not make up more than a fourth of the grain fed to growing pigs. For breeding pigs, a fourth to a half of the ration can be oats. Oats will help keep the pigs from getting too fat. Since oats have a hull that pigs do not like, it should be finely ground before feeding. Grinding makes the hull less noticeable.

BARLEY

For pigs, ground barley has about 90 percent of the feeding value of corn. Pelleting a barley ration will improve its feeding value equal to a corn-based ration. If you feed barley, be sure that it is ground. Scabby (diseased) barley is not a good feed for pigs.

WHEAT

It usually pays to grind wheat for hogs. Wheat should be coarsely ground and mixed with another ground grain such as corn. Finely-ground wheat fed by itself makes a doughy mass that pigs do not like. Pound for pound, ground wheat is about equal to shelled corn in food value.

PROTEIN SUPPLEMENTS

In addition to protein, protein supplements contain vitamins, minerals, and possibly antibiotics. These supplements may be home-mixed or bought ready-mixed. Ready-mixed supplements are often a little more expensive than home-mixed ones, but they usually have less bulk and will produce slightly faster gains. Suggested home-mixed supplements are shown below. These supplements are satisfactory for free-choice feeding with whole corn, or for adding to ground grain in a ground and mixed complete feed.

	Pigs in confinement		Pigs on pasture
	less than 75 pounds (pounds)	more than 75 pounds (pounds)	all weights (pounds)
Soybean meal	72	45	65
Alfalfa meal	—	20	—
Meat scraps	20	30	30
Feeding limestone	3	2	2
Dicalcium Phosphate	3	2	2
Trace-mineralized salt	2	1	1
Antibiotics	25 grams	25 grams	35 grams

Vitamins. Pigs on good legume pasture such as clover or alfalfa get nearly all the vitamins they need from the growing plants. The vitamin content of protein supplements is most important when pigs are in confinement or on poor, dried-up pasture.

Minerals. The limestone, Dicalcium Phosphate, and trace-mineralized salt listed in the home-mixed supplement will take care of your pig's mineral needs. If you wish, you can replace these three minerals with

an equal amount of a complete mineral mix that you can buy. Be sure that the trace-mineralized salt you use (or the complete mineral mixture) contains zinc (100 ppm in total ration). Read the label on the bag carefully. If you feed your pig a ration that does not contain added zinc, he may contract parakeratosis. This is a condition in which the pig's skin gets crusty and cracked along the side, flanks, and legs.

Antibiotics. Antibiotics are often added to protein supplements to help control some diseases and increase gains up to 100 pounds in your pigs. There is some evidence that a mixture of two or more antibiotics is better than one antibiotic.

If you cannot get the antibiotics to mix in your home-mixed protein supplement, you probably will be better off buying a ready-mixed protein supplement that contains an antibiotic.

HOW MUCH TO FEED

The chart below shows how much total feed (grain and protein supplement) your pig will eat each day if you give him all the feed he wants. It also shows how much weight gain you should expect each day.

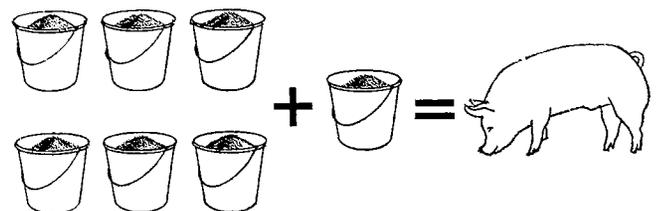
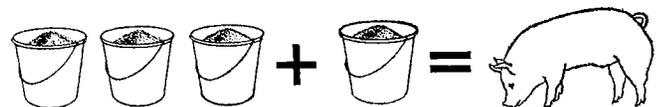
Give your gilt all she will eat at least until she weighs 150 pounds. You may want to reduce the feed intake on gilts at that weight or they may get too fat.

Weight of pig (pounds)	Weight of feed eaten each day (pounds)	Daily gain in weight (pounds)
25	2.0	0.8
50	3.2	1.2
100	5.3	1.6
150	6.8	1.8
200	7.5	1.8

From the time your pig is weaned until he weighs 100 pounds, he will need 16 percent total protein in his feed. From 100 pounds to 200 pounds, he will need 12 to 14 percent protein. Corn contains about 8.5 percent protein, and most supplements contain about 37 percent protein. Here are two rules to remember:

1. For a pig weighing 100 pounds or less, mix three parts of grain with one part of supplement by weight.
2. For a pig weighing more than 100 pounds, mix six parts of grain with one part of supplement by weight.

If you offer the grain and supplement to your pig in separate parts of a self-feeder, he probably will eat about the correct amount of supplement. If you grind the grain and mix it with the protein supplement, your pig will gain faster, and you can keep him from eating too much supplement. The grinding and mixing cost may equal the savings gained by the pig's eating less supplement.



PROVIDE PLENTY OF WATER

It is as important for your pig to have fresh, clean water as it is for him to have the right kind of feed. A pressure waterer will provide your pig with water whenever he wants it. If you give your pig water in a trough, water him at least three times a day, and be sure that the trough is big enough so that he never runs out of water.

Fasten the trough on a platform at least 3 feet square so that your pig can't tip it over and make a mudhole.

PASTURE FOR YOUR PIG

A good pasture saves feed, helps furnish minerals, protein, and vitamins, and provides a clean, healthy place for your pig to live. The best pastures are legumes, such as alfalfa or ladino clover. If you do not have legumes, try to have a pasture of oats and red clover. Your county extension agent can give you more information about pasture mixtures.

Letting your pigs run on pasture will help keep them looking trim and muscular rather than fat and flabby. The exercise they get also will help keep their feet and legs straight and strong. This is especially important in the case of gilts.

Questions to Answer

1. Does a young pig need more or less protein than an older one?
2. What are the advantages of grinding feed for pigs?
3. What do protein supplements contain other than protein?

keeping your pig healthy

PREVENT DISEASE

There are several diseases that attack pigs. Erysipelas, rhinitis, and virus pig pneumonia are three diseases of major concern.

Erysipelas can be prevented by vaccination. If you buy an unvaccinated pig, stop by the veterinarian's office on the way home and have the pig vaccinated. Be sure that your pig is vaccinated before he is 10 weeks old.

Baby pigs get rhinitis and virus pneumonia from their mothers when they are a few days old. Often you can't tell by looking at a pig whether he has these diseases. If your parent, club leader, or veterinarian is not sure whether a certain farm is free of rhinitis and virus pneumonia, look elsewhere for pigs. Don't take a chance.

For more information on symptoms and control of these and other diseases, see your county extension agent or local veterinarian.

CONTROL PARASITES

There are two classes of parasites that injure pigs—internal parasites (those that live inside the pig) and external parasites (those that live on the pig's skin).

Roundworms are the most troublesome internal parasites of hogs. Never let your pigs come in contact with ground where pigs were kept during the previous year. This is one reason why a new legume pasture is so valuable for pigs. Right after weaning time, worm your pig with Atgard, Piperazine, or Tramisol. Ask your extension agent where you can get this material.

Lice and mange are the most troublesome external parasites. They can be controlled by spraying your pig with Toxaphene, Ciodrin, or Malathion. Always follow the package directions for mixing the spray solution.

Spray your pig twice (at 2 week intervals) immediately after weaning, and you shouldn't have any trouble with external parasites.

Questions to Answer

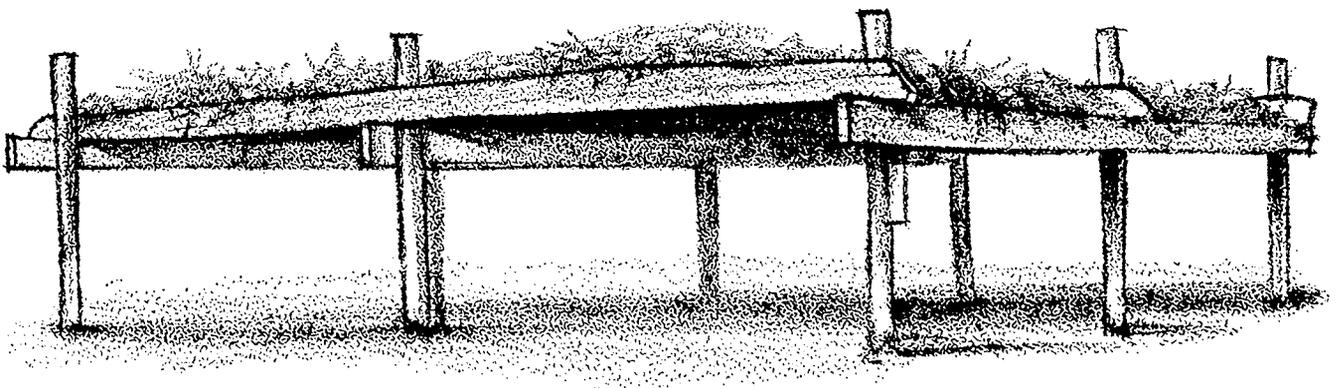
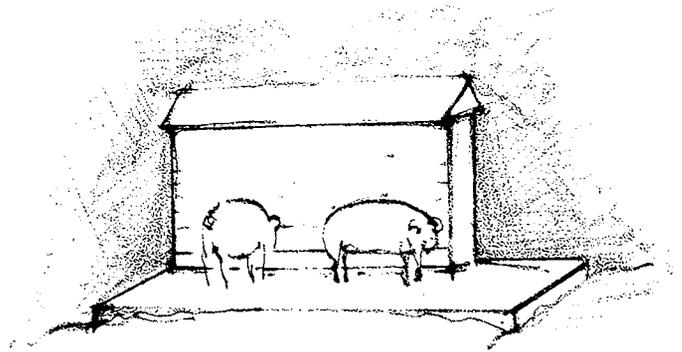
1. What disease can be prevented by vaccination?
2. What do you use Malathion for? Atgard?
3. How does a pig get rhinitis?

equipment you will need

SHELTER AND SHADE

Your pig will need protection during the late fall, winter, and early spring. Although the building does not have to be elaborate, it should provide a dry, clean area. Use straw for bedding during the extreme cold weather and make sure you have adequate water for your pig. If available, a slotted floor will reduce cleaning chores.

If your pig is out in a drylot or on pasture, cool shade is a must for hot weather. If there is no natural shade such as trees, an artificial shade that is open on four sides can be used. You may want to build an inexpensive straw shade like this. A closed building is not satisfactory during Minnesota summers. If pigs don't have cool shade, they will not gain well, and may even die during the hot days of July and August.



FEEDING EQUIPMENT

You may need buckets for carrying feed and water and a separate trough for each. Or, you can use a self-feeder and a pressure waterer. If you use a trough for water, have it built so that pigs cannot lie in it in hot weather.

SHOW EQUIPMENT

For the show you will need the following equipment: bucket and feed pan, brush and soap, feed, bedding (shavings are best in hot weather, but bright, clean straw is satisfactory), cane or whip, sprinkling can, and a show box for your equipment so that it won't be lost.

A plan for building a show box is contained in (Midwest Plans) MWPS-6, "Beef Equipment Plans." Plans for building other swine equipment are shown in MWPS-2, "Swine Equipment Plans." You can obtain copies of both of these publications from your county extension agent.

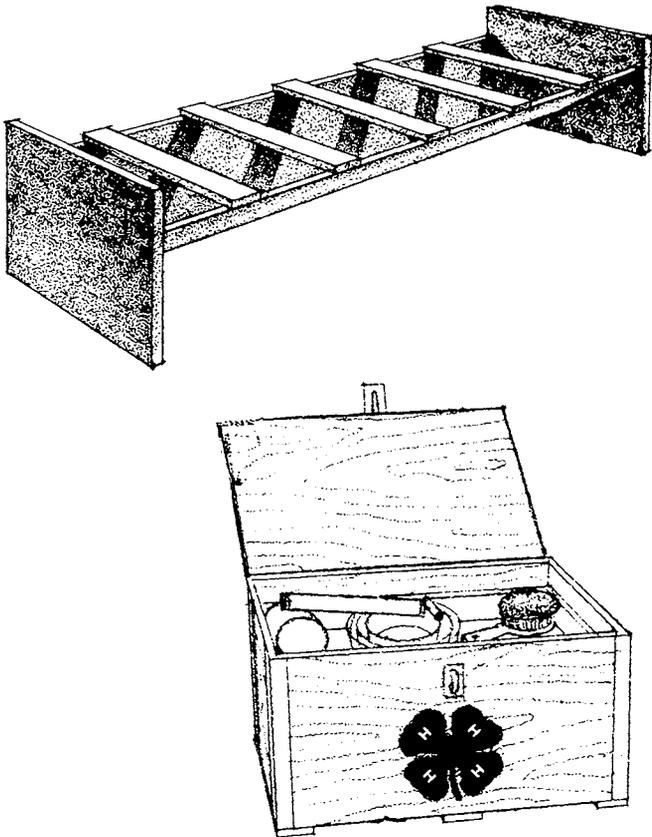
Questions to Answer

1. Is a shed open on one side good shelter in hot weather? If not, what is better?
2. What show equipment will you need for your pig?

getting ready for the show

If you want your pig to look his best when you show him, start preparing for the show a couple of months in advance. Here are some things you should do:

1. Brush your pig once a day or at least 3 times a week. This adds "bloom" to the hair coat and makes it lie down properly. It also makes the pig gentle.
2. Wash the pig a couple of times during the month before the show and the day before the show. Use a stiff brush and mild soap. Be careful not to get water in the pig's ears. Rinse the soap off thoroughly, but don't use so much cold water that you chill him.
3. If your pig's hooves are too long, trim them at least 2 weeks before the show. Ask an experienced person to help you. If you trim the hooves too closely, you may cause lameness.
4. Practice driving your pig every day the month before the show. Don't make a pet out of him, but teach him to respond to a lightweight cane or whip. Don't use a hand hurdle on a gilt or barrow. (You may want to use a hand hurdle when you are older and plan to show boars.) A good time to practice is in the cool of the evening after the feeding.



5. Clip the hair on your pig's ears and tail during the last week before the show. Leave about a 4-inch switch on the end of the pig's tail.
6. Be sure that you have all of the equipment you will need at the show. (See section on equipment.)

at the show

Try to arrive at the show during the cool part of the day—early in the morning or late in the evening. If possible, use a pen that is on the north or east side of the tent or building. These pens will be cooler than those on the south and west.

Use only enough bedding in your pen to keep your pig clean. Too much bedding makes him hot. If the bedding is damp and dirty, change it. Wet bedding gets hot and steamy in warm weather.

Feed your pig inside his pen, but do not allow him to spill his feed or water. Clean out the pen after feeding and add clean bedding.

Feed early in the morning and late in the evening in hot weather. Your pig will eat better at those times.

Water your pig several times during the day. Don't leave a pan of water in the pen. Your pig will upset it and get his pen messy.

Keep the aisle in front of your pen clean and neat.

Check on your pig at least every hour during hot weather. If he is getting hot, sprinkle a small amount of cool water on his head. But don't use so much that you get the bedding wet.

Exercise your pig twice a day, early morning and late evening. This will improve his appetite and prevent lameness.

SHOW DAY

On show day, feed your pig early in the morning. If you are showing a barrow, don't give him all he will eat. Feed him only what he will clean up in about 10 minutes. Too much feed will make him look wasteful and heavy-middled.

Since you washed your pig the day before, he will need only a few last minute touches before you enter the ring.

If you are showing a white pig, wash him the day before the show, and then apply some cornstarch to his coat. Let the starch dry and then brush him clean.

If you are showing black or red pigs in hot weather, sprinkle them with water until they are wet, and then brush them. In cool weather, wipe your pig's hair with a rag soaked in a mixture of half rubbing alcohol and half mineral oil. The oil tends to make pigs hot in warm weather. The main thing is to have your pig clean.

Check the show schedule and get your pig ready to go into the ring promptly when your class is called.

Handle your pig gently on the way to the ring. Above all, don't fight him if he doesn't want to go. A pig that is hot and excited when he gets to the ring won't show to good advantage.

IN THE RING

Try to keep your eyes on both the judge and your pig. You can do this if you keep your pig between yourself and the judge. Be alert to any order the judge may give.

Drive your pig slowly across the ring during judging. Don't keep him right under the judge's feet, but try to drive him toward an open space about 15 feet in front of the judge. The judge can see your pig best at this distance.

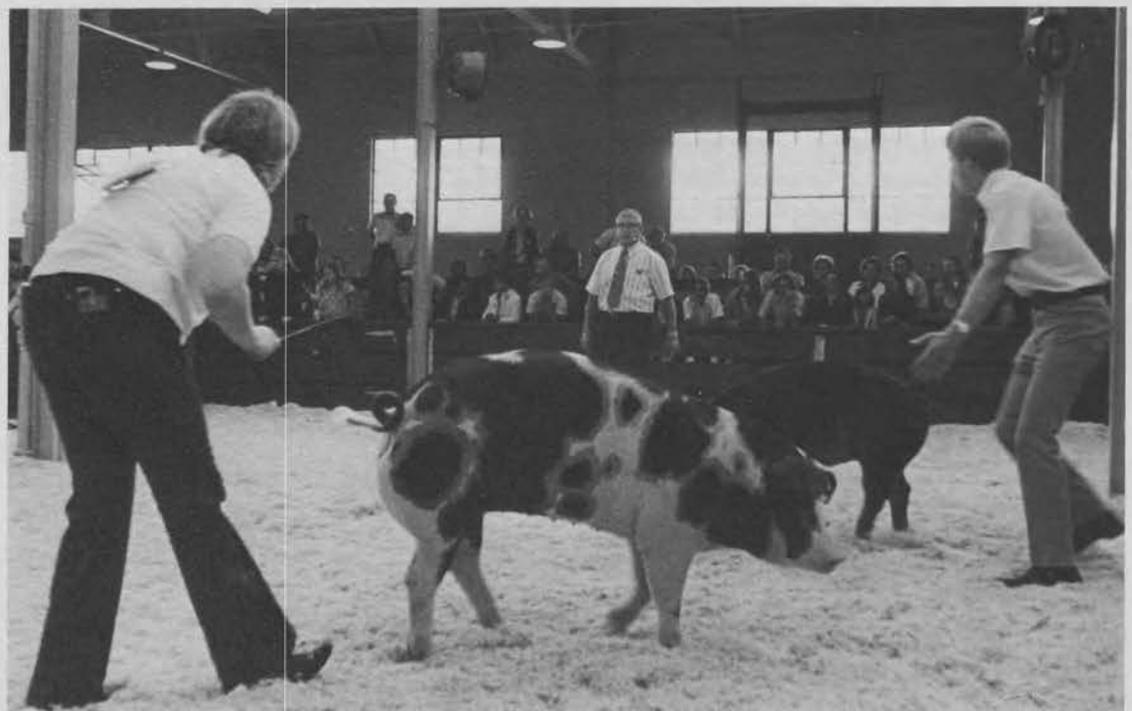
Watch closely to be sure that the judge gets at least one good look at your pig.

The judge may want to get close to your pig, and may even want to handle him. If he does, try to stop your pig so that the judge can get his hands on him.

Keep your hands off your pig's back and rump. If you want him to move, tap lightly on his side with your cane or whip. Putting your hand on his back or rump will cause him to look as if he has a weak back.

Keep your pig moving. Most pigs look best when walking.

The judge probably will give reasons why he placed the pigs as he did. Listen closely and try to find out the good and bad things about your pig. If you want to ask a question about your pig, wait until the judge



has finished talking. Ask your question in a courteous manner, and ask it while the pig is still in the ring. Any judge will be glad to answer a question at that time.

Be a good sport. Win without boasting and lose without complaining.

Watch older boys and girls drive their pigs in the ring. You can learn a lot from them.

Questions to Answer

1. What are the six things you can do to get your pig ready during the last 6 weeks before the show?
2. When should you feed your pig at the show?
3. What is the difference in grooming a white or a dark pig for the show?
4. If you have a question to ask the judge, when should you do it?
5. What is the best way to drive your pig?

after the show

Since pigs sometimes pick up flu at the show, keep your pig away from other pigs on the farm for a couple of weeks after you bring him home.

YOUR BARROW

If your pig was of market weight and you sold him, ask the meat packing plant for carcass data. If your show has a carcass contest, study the results of the show and compare your pig to the others in the show. Learn all you can about your pig and improve on your next year's project.

MANAGING YOUR GILT

If you have a gilt, you probably will want to breed her. Feed and manage your gilt so that she will not be too fat at breeding time. Since gilts are bred when they are between 8 and 9 months old, there will be a 2 to 3 month period after the show before she is bred.

The best way to handle a gilt during this period is to have her on good pasture and feed her 4 pounds of grain and 1 pound of supplement or 4 to 5 pounds of a complete ground and mixed 16 percent ration each day. If she is in drylot, feed her 5 pounds of the complete ration. If you have cared for her well, she will weigh between 275 and 300 pounds when she is bred.

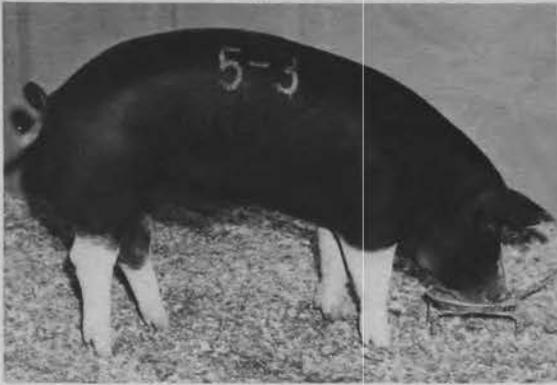
Questions to Answer

1. Why should you keep your pig separate from the other pigs on the farm after you bring him home from the show?
2. How much should you feed your gilt the months prior to breeding?
3. At what age is a gilt usually bred?

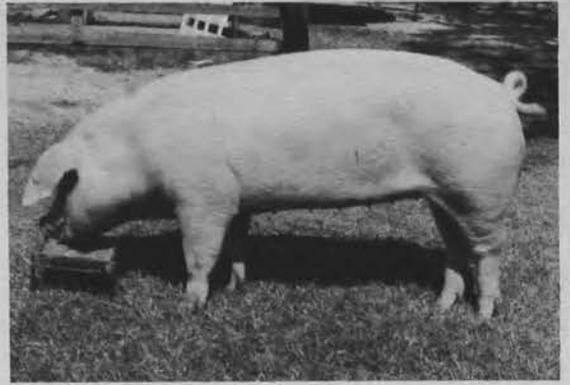
Credit is given to G. R. Carlisle, Extension Livestock Specialist, University of Illinois for use of swine manual materials.

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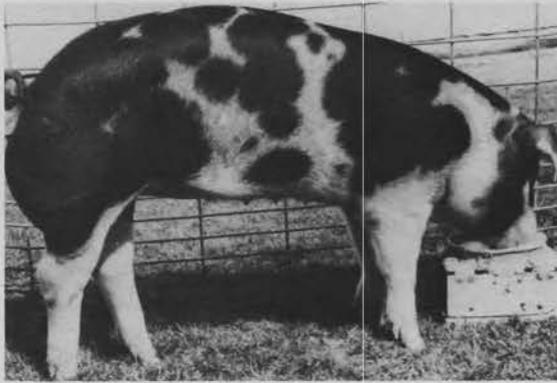
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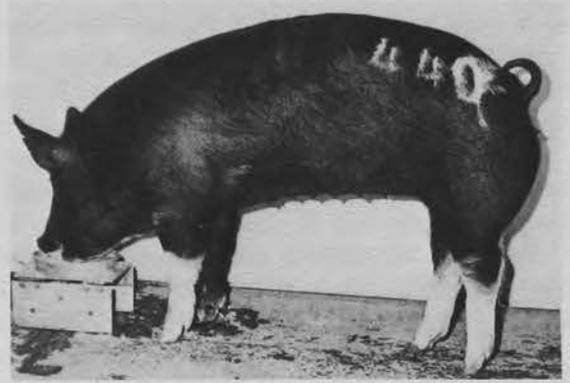
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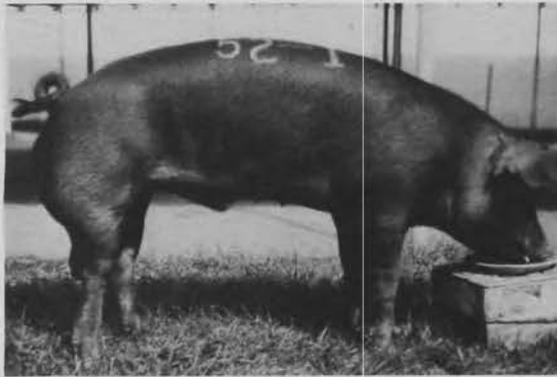
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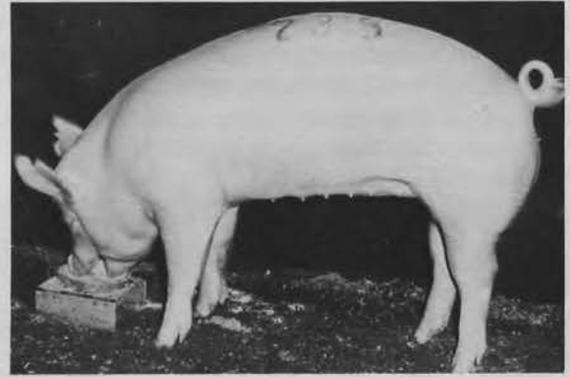
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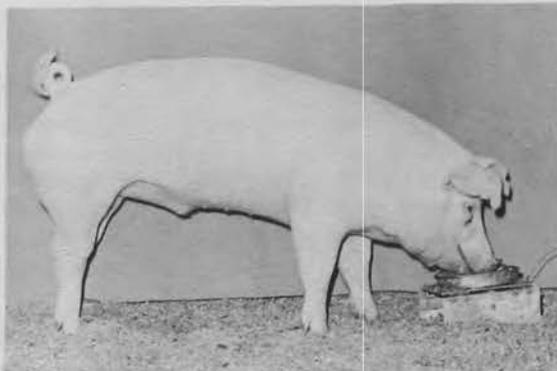
BERKSHIRE



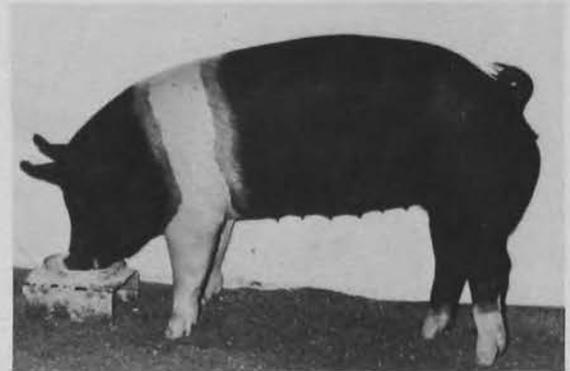
DUROC



YORKSHIRE



CHESTER WHITE



HAMPSHIRE