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4-H Swine Club Manual : Extension Circular 2-01-2

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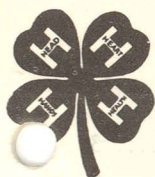


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4-H SWINE CLUB MANUAL

EXTENSION CIRCULAR 2-01-2

THE UNIVERSITY OF NEBRASKA COLLEGE OF
AGRICULTURE EXTENSION SERVICE, LINCOLN



4-H SWINE CLUB MANUAL

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7M.

Extension Service of the University of Nebraska College of Agriculture
U. S. Department of Agriculture Cooperating
W. H. Brokaw, Director, Lincoln, Nebr.



A "livestock loss prevention" demonstration team. 4-H Club work offers many useful activities in addition to regular project work.

4-H SWINE CLUB MANUAL

E. W. JANIKE*

BOYS and girls who are interested in livestock club work usually like 4-H Swine Clubs. Those who take part in them find plenty of opportunities for help and advice from experienced hog men because hogs are raised on most Nebraska farms. They find opportunity, as in all 4-H club work, to develop themselves through personal experiences and group associations. In addition, they find satisfaction in owning and caring for their own pigs, and in keeping records and learning feeding practices for them.

There are many variations in Swine Club work. A member can start with a market pig or purebred gilt at weaning time and keep records for 100 days, or until the market hog is sold or the gilt has matured and is ready to be carried into the "litter" project. In the litter project the records are kept on the sow at least until weaning time, and for the pigs for at least 100 days after weaning. Purebred and market pig projects are best when started early in May with a weanling pig.

In addition to the hog management training, there is an opportunity to practice livestock judging and showing and to participate in demonstrations on livestock problems.

The following material is prepared to help Swine Club members and their local leaders in carrying on a successful Swine Club year.

A FEW FACTS ABOUT HOGS

Over the years, hogs have been Nebraska's leading source of farm income. Prior to the drought years of 1934 to 1940, 30 per cent of the farm income was from hogs. They will no doubt continue to be a leading source of income because of their adaptation to Nebraska feeds, climate, and farming systems.

Hogs are adapted to small or large scale production and as a result require a small initial outlay. One can start with a bred gilt as a unit and expand to any adapted number. This cannot be done readily with sheep, and cattle require a large original investment. Many 4-H club members start with a pig or two at weaning time and grow them out.

Hogs are efficient feed consumers. They will produce more meat per pound of feed than other meat animals.

Hogs offer a quick turnover. Starting with a bred gilt eight months old, it is possible to produce a litter of pigs and have them all on the market within 12 months.

Hogs depend largely on concentrates for their feed. Drought years like 1934 and 1936 cause sharp curtailment of hog production unless adequate feed reserves are carried over.

* The writer wishes to acknowledge the helpful suggestions given by Professor Wm. J. Loeffel and Dr. L. E. Hanson.



Records are essential in any project. Keep them where it is convenient to write things down at the time.

MANAGEMENT

Every 4-H Pig Club member should make up his mind at the start to carry out two management practices that are essential to a long-time successful hog program. First, he should decide to keep good records by using the record book provided in the club material. Second, he should set up a budget at the start to plan the cash, feed, equipment, and other things essential to complete the project.

Included in the budget should be cost of gilt or market pig, feed, pasture, equipment, boar service, veterinary fees, interest on investment, marketing, and other costs. The following is a sample budget for a unit or one market litter of pigs. Figures used are based on long-time operations rather than current prices any one year. Club members should adjust prices to present day trends.

Income

1 sow—300 lbs. @ \$6.00 per cwt.	\$18.00
6 hogs—1,350 lbs. @ \$7.00 per cwt.	94.50

Total Income

\$112.50

Expenses

1 gilt from herd—200 lbs. @ \$7.00	\$14.00
Feed for gilt and litter from breeding time to market at 300 lbs. and production of 1,350 lbs. pork:	
100 bu. corn @ 56c	\$56.00
300 tankage @ \$55.00 per ton	8.25
150 soybean meal @ \$38.00 per ton	2.85
100 lbs. alfalfa @ \$8.00 per ton	.40
Pasture equivalent to 1 cow for 3 months	1.50

Total Feed Cost

\$69.00

Boar charge

1.50

Miscellaneous

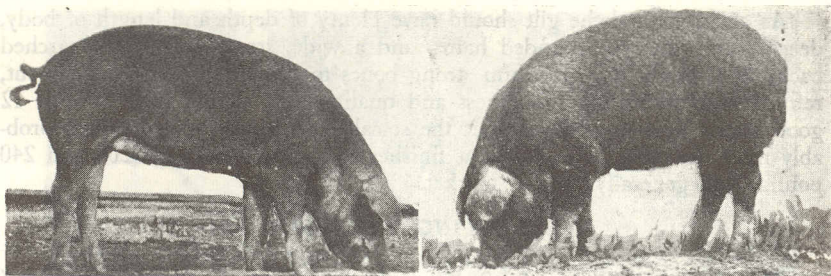
5.00

Total Expense

\$ 89.50

Labor income per unit

\$ 23.00



An undesirable type. Light hams, shallow body, and lack of symmetry.

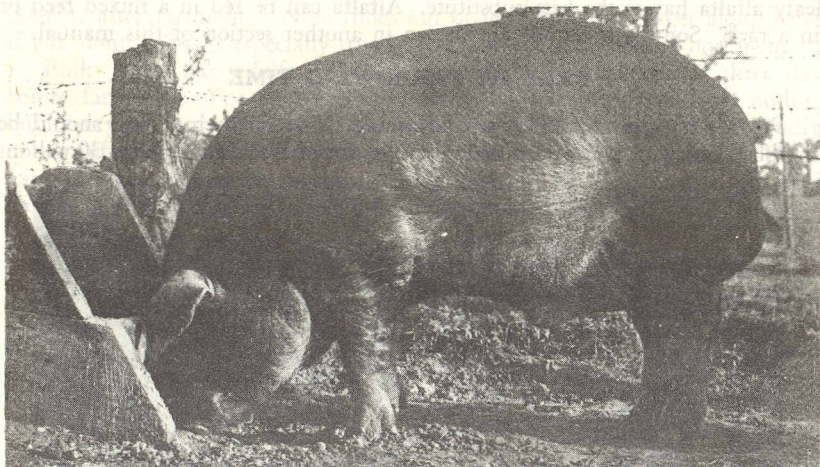
A more desirable gilt. Note the depth and length of body and the deep, plump ham.

SELECTING THE BREED

There are more differences among individuals within a breed than there are among breeds. By selecting a breed common in the locality, the club member will have a wider selection of breeding stock to begin with and for replacement later on.

SELECTING A GILT

A desirable gilt should have a good family record behind her. She should be from a large, uniform, and thrifty litter. When a cattle feeder buys a load of calves for his feed lot, he likes to see the cows that produced the calves as well as the bull that sired them. By so doing he gets a good idea of how his calves will develop and feed out. Likewise, size of litter, uniformity and gaining qualities are transmitted to the offspring. Hog men today are paying more attention to production records than ever before.



The "right" type for a herd sire. Note the deep symmetrical and "meaty" appearance.

As an individual the gilt should have plenty of depth and length of body, deep, plump and full-rounded hams, and a wide, strong and evenly arched back. She should have medium strong bones to support her and a clean-cut, refined head indicating broodiness and quality. She should have at least 12 good teats. Year in and year out the so-called medium type of gilt is probably most desirable. The hog that finishes at a weight between 200 and 240 pounds will generally top the market.

SELECTING THE BOAR

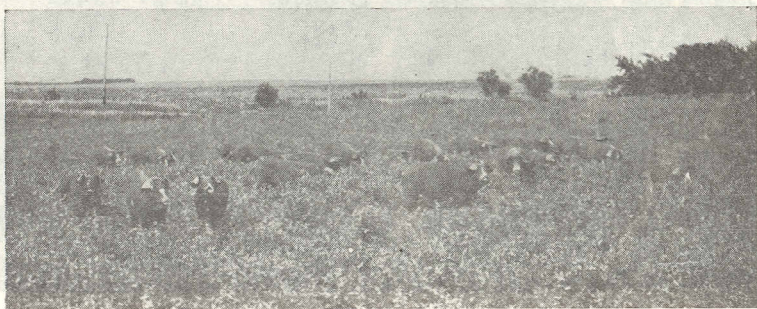
Remember the wrong kind of gilt will transmit her characteristics to only one litter. The wrong kind of boar affects every litter he sires. Production records behind a boar are important and the same precautions that apply to the selection of a gilt should apply to the boar. He too needs exercise, green feed, and plenty of protein. Ordinarily, a young boar should not be used more than once daily.

CARE OF THE BRED GILT

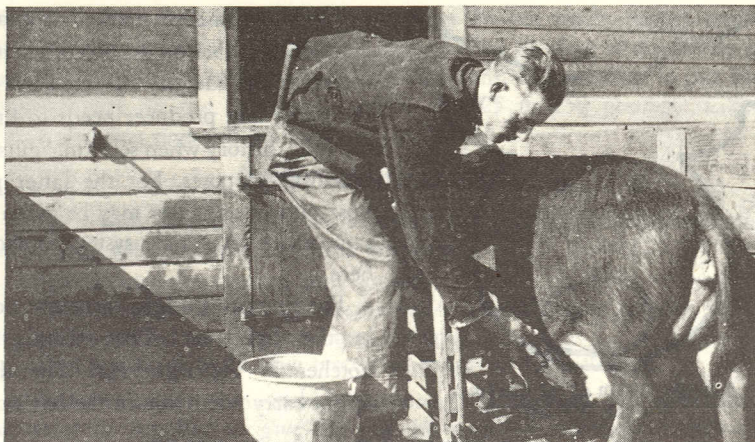
In the market litter phase of pig club work, most members start with a bred gilt. Usually, gilts are bred at about eight months of age. The gilt should be kept in a healthy gaining condition from breeding time to farrowing, but she should not be permitted to put on excessive fat. This period is a critical one and has quite an influence on the strength of pigs and their ability to survive at farrowing time. By using bulky feeds like oats, alfalfa and bran, the danger of too much fat can be avoided. Plenty of exercise and clean fresh water are important. Exercise can be provided by pasture in season and by feeding out away from the shed during cold weather. Green pasture provides important minerals and vitamins as well as some protein. It should be provided whenever possible. When pasture is not available, green leafy alfalfa hay is the best substitute. Alfalfa can be fed in a mixed feed or in a rack. Some gilt rations are shown in another section of this manual.

CARE AT FARROWING TIME

Provide a clean dry place for farrowing. The farrowing shed should be scrubbed out with boiling lye water. (One can of lye is enough for 30 gallons



Pasture cuts pork costs. It provides minerals, vitamins, and proteins.



Scrubbing the sow before farrowing removes dirt that may contain parasite eggs.

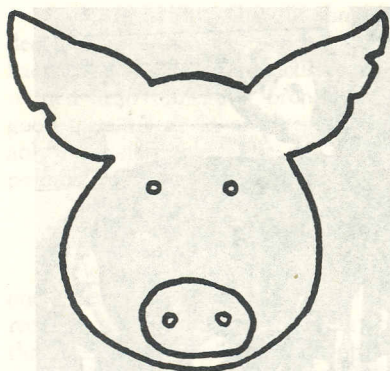
of water.) Before putting the sow in the clean house, wash her udder and feet with warm soapy water. She should be kept away from other hogs for three or four days before farrowing. A small amount of clean dry bedding (a big basket of straw is enough) is best. With too much bedding the pigs may get covered up and the sow lie on them. Guard rails around the edges of the farrowing pen will help protect the pigs.

Strong healthy pigs may be left with the sow. Weak ones, especially in real cold weather, may be put in a basket lined with a gunny sack or straw, and kept warm until the sow finishes farrowing. A jug of hot water in the basket will help keep them warm. The pigs should nurse as soon as possible after farrowing. Nine times out of ten the sow will get along better if left alone. This is especially true in the case of inexperienced hog men.

Bulky feeds like alfalfa, oats and bran should be fed two or three days before farrowing. For 24 hours after farrowing the sow should get nothing but plenty of fresh water with the chill taken off. Starting with a handful or two of bulky feed, the sow should be gradually worked up to a full feed. Light feeding should be continued for a week to 10 days because too much feed soon after farrowing is likely to cause scours in the pigs.

FROM FARROWING TO WEANING

After the sow is back on full feed, she should get plenty of pasture, water, and exercise in addition to her protein-rich feed. If the pigs scour, the amount of feed to the sow should be cut down. In some cases it may be advisable to skip a feed. Right after farrowing is a good time to clip the "wolf" teeth from the little pigs. There are two in each corner of the mouth. A side-cutting jeweler's pliers will do the job. Care should be used to prevent injury to the gums. Such injuries offer easy access for diseases such as Bull Nose. These teeth are apt to bother the sow when the pigs nurse and later they will cut other pigs when they fight.



A simple system of ear marking.
V-right, VV-left.

- | | | | |
|---------|---------|------|-----------|
| 1. V-R | 5. V-R | V-L | 9. VVV-R |
| 2. VV-R | 6. VV-R | V-L | 10. VVV-R |
| 3. V-L | 7. V-R | VV-L | VV-L |
| 4. VV-L | 8. VV-R | VV-L | 12. VVV-R |
| | | | VVV-L |

Pigs should be ear marked soon after farrowing. Purebred breeders must maintain the identity of the herd and the grade hog producer needs to know the litter history when selecting gilts for breeding purposes. For the latter purpose pigs of one litter may be given the same mark. A simple system is shown here.

The first litter might carry one notch in the right ear. The second, two notches in the right ear. The third might carry one notch in the left ear.

The pigs should get the advantage of all direct sunshine available. When pigs are about two weeks old, they will start eating a little feed. It's a good idea to provide a creep near the shed so the pigs can get in and have some feed of their own. The same feed used for the sow will get them started. Castrate boar pigs when they are four to six weeks old. When castrating boar pigs in the purebred litter, the 4-H member should remember that the boar must be as good or superior to the sows to which he is mated. Too many inferior boars are kept. Only the outstanding individuals from large uniform litters should be saved. All pigs should be vaccinated for cholera. A good time to do it is at six weeks of age, or two to four weeks after castrating. Less serum is required than later and the pigs will recover more quickly while still nursing the sow. Weaning is generally done at from eight to 10 weeks. If a fall litter is to be produced the pigs should be weaned at eight weeks. If grain has been provided in a creep the pigs will go right on from weaning time with little noticeable change.

The start a pig gets while nursing the sow will go a long way toward efficient gains and low-cost production.

FROM WEANING TIME TO MARKET

From weaning the pigs should be full-fed on a well-balanced ration until ready for market. Self-feeding will save labor and produce faster gains. At about 180 pounds the gilts to be used for breeding purposes should be separated from the others and put on a more bulky ration.

MARKETING

September and March are generally the high times for the year as far as hog prices are concerned. These are the times when the number of hogs

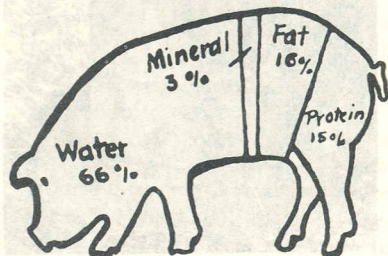
going to market is lowest. Most spring pigs do not reach market until the last three months of the year and fall pigs go after the first of April. By good management and by feeding well-balanced rations, it is possible to put March farrowed pigs on the September market at 225 to 250 pounds. Likewise early September pigs can be marketed in March.

FEED REQUIREMENTS

A pig's body is principally made up of fat, protein, mineral, and water. Market pigs use their feed for three purposes:

1. Part is used for normal body growth.
2. Part is used for energy to maintain general body activity. (When a pig walks around or squeals he uses energy.)
3. Part is used to build up a reserve of energy or for fattening.

In order to carry on these three purposes, it is essential that sufficient feed and water be supplied to give the pig the required amounts of each. Carbohydrates furnish a source of energy and fat. They provide a means of carrying on the body activity of the pig. Proteins provide the lean tissues since red meat is primarily protein. Minerals make up most of the bony structure. If the pig is to carry on efficiently, it is important that these feeds be supplied in the proportion that the body needs them. In so far as carbohydrates, fats, and proteins are concerned, a 75-pound pig needs approximately 5.2 pounds of digestible carbohydrates and fats for each pound of digestible



Composition of 100-pound pig.

protein. Corn has 10.4 pounds of digestible carbohydrates and fats for each pound of digestible protein, so one can readily see that when corn alone is fed quite a bit of the carbohydrates and fats will be wasted because of a shortage of protein to go with them. On the other hand tankage has fats equivalent to 0.3 pounds of carbohydrates for each pound of digestible protein. By mixing the two feeds or by feeding them in just the right amounts the requirement will be met and the pig will make efficient use of the feeds. Hogs self-fed do a good job of balancing their requirements and where they have free access to grains and high protein feeds in separate feeders they will balance their ration quite well.

Protein is generally the limiting feed material in both growing and fattening rations.

VITAMINS

Certain vitamins are essential to the nutrition and health of pigs. Green, growing pasture provides an abundant supply of essential vitamins during the summer months, and during the winter it can come from green, leafy alfalfa as hay or meal. This will help supplement the regular feeds in providing necessary vitamins. Winter farrowed pigs, especially during cloudy

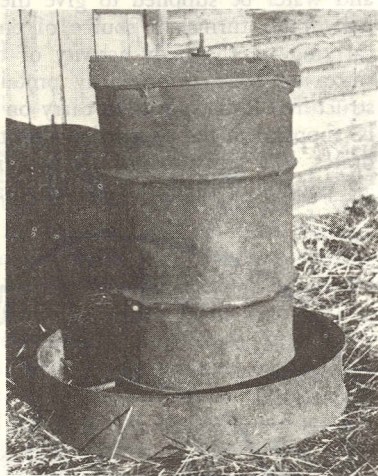
weather, may need a little fish liver oil in their ration to take care of the vitamin D requirement.

FEEDS

Feed costs make up 70 to 80 per cent of the cost of producing pork. This percentage will vary from year to year as feed prices and other costs fluctuate. Careful planning of rations will help cut production costs. The digestive system of the hog is not adapted to consuming large amounts of bulky roughage feeds. It depends largely on concentrates, which are divided into two groups: Those low in protein like corn and barley, and those high in protein like tankage and skim milk.

GRAINS AND GRAIN FEEDS

Corn is the principal grain feed in Nebraska and is the basic one with which others are compared. It is high in carbohydrates and fats but low in protein. Barley, grain sorghums, oats, rye and wheat are the other more common grains in Nebraska and they can all be used in the hog ration. Oats are bulky and fit into a growing ration better than into a fattening ration. Rye is not as palatable as other grains and should be fed with some other more palatable grain like barley or corn. For fattening pigs, 100 pounds of ground barley are approximately 85 per cent as valuable as 100 pounds of corn. Used on good pasture and with adequate mineral supplements the comparable values of the other grains are: grain sorghums 90 per cent, oats 75 per cent, ground wheat 103 per cent, and ground rye 85 per cent. These values will vary with the quality of the grain and the method by which they are fed. Another way to compare their values is shown in the following table:



An inexpensive self-feeder made from a steel drum and a planter wheel.

Price of Corn Per Bushel	\$0.42	\$0.56	\$0.63	\$0.70	\$0.77	\$0.84
1 bu. Wheat (ground).....	.46	.62	.69	.77	.85	.93
1 bu. Rye (ground).....	.36	.48	.54	.60	.65	.71
1 bu. Barley (ground).....	.31	.41	.46	.51	.56	.61
1 bu. Oats (good ground).....	.17	.22	.25	.28	.31	.34
100 lbs. grain sorghums.....	.68	.90	1.01	1.13	1.24	1.35

Find the nearest price of corn in top row, then read down to get comparative values.

PROTEIN CONCENTRATES

With the exception of skim milk, most protein concentrates have to be purchased. There is a tendency to skimp on these concentrates but they are

essential to a well-balanced ration and generally will result in lower costs in the long run.

Tankage, meat scraps, fish meal, and skim milk are of animal origin and are excellent sources of protein for hogs. This is especially true if just one supplement is being used. In a balanced ration one pound of tankage will replace four pounds of corn on pasture and six pounds in the dry lot.

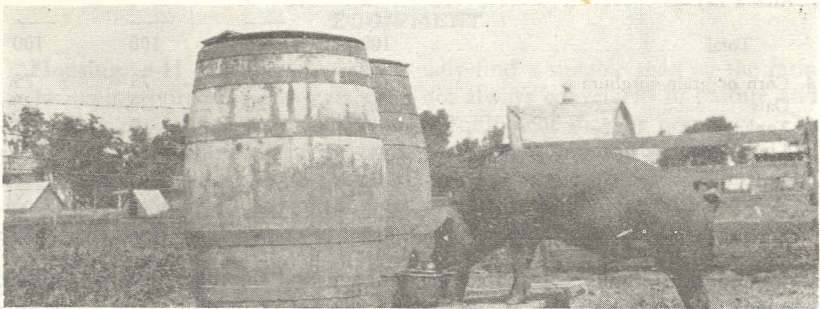
Soybean oil meal, cottonseed meal, and linseed meal, are of vegetable origin and do not make satisfactory supplements when used alone for pigs weighing under 75 pounds. Compared to the animal proteins, they are low in calcium and phosphorus. A simple mineral mixture such as the 2-2-1 (two parts ground limestone, two parts steamed bone meal, and one part salt) should be self-fed whenever vegetable proteins make up more than one-third of the protein supplement. Green, leafy alfalfa as hay or meal should be provided when pigs are not on pasture.

Recent experimental trials indicate that soybean oil meal can be used as the only protein supplement for pigs on pasture and for pigs in the dry lot weighing more than 75 pounds. Pigs under 75 pounds in the dry lot should have at least 25 per cent of the protein supplement made up of tankage or some other animal protein. A good mixture of proteins for pigs in the dry lot is 40 pounds of tankage, 20 pounds of alfalfa meal, and 40 pounds of soybean oil meal, linseed meal, or cottonseed meal.

Skim milk and buttermilk are excellent sources of protein. In many cases they are available right at home. They are especially good for young pigs and for breeding stock, and they are good conditioning feeds. As a protein supplement 12 gallons or 100 pounds of skim milk are worth approximately one-half the price of corn per bushel for fattening hogs.

PASTURE

Green, growing grass is one of the most economical and beneficial feeds available to hogs. Pasture promotes rapid growth and provides essential minerals and vitamins; it reduces labor and feed requirements. Alfalfa is excellent for hog pasture. Generally, farrowing houses can be located on alfalfa pasture and the pigs can be kept there until they are ready for market. Brome grass or mixtures of brome and alfalfa will generally provide pasture



Hogs should have an abundant supply of clean, fresh water.

throughout the season. Sweet clover, rape, fall-sown rye, spring-seeded small grains, and Sudan grass are used extensively in Nebraska for temporary hog pastures. Fall-seeded rye provides late fall and early spring pasture. Second-year sweet clover or spring grains follow rye. Sudan is adapted to the hot weather months of July and August and will usually provide feed till frost.

SOME SUGGESTED RATIONS

The following rations from "Feeds and Feeding"—20th edition—by F. B. Morrison offer some combinations for weaned pigs that can be mixed and either self-fed or hand-fed:

When using mixtures of this type, the grain should be ground and the alfalfa chopped or ground. Pasture means good, green, palatable pasture.

Mixtures for	Not on pasture, up to 100 lbs.	Not on pasture, over 100 lbs.	On pasture, up to 100 lbs.	On pasture, over 100 lbs.
Growing and Fattening Hogs	Lbs.	Lbs.	Lbs.	Lbs.
1. Corn or grain sorghum.....	80	85	88	92
Tankage	10	5	6	4
Linseed meal, soybean oil meal or cottonseed meal	5	5	6	4
Legume hay	5	5	.	.
Total	100	100	100	100
2. Barley or wheat.....	84	89	94	98
Tankage	6	3	3	2
Linseed meal, soybean oil meal or cottonseed meal	5	3	3	.
Alfalfa hay	5	5	.	.
Total	100	100	100	100
3. Corn or grain sorghum.....	68	70	74	77
Wheat middlings	15	20	20	20
Tankage	7	5	6	3
Linseed meal, soybeans, or cotton- seed meal	5	.	.	.
Alfalfa hay	5	5	.	.
Total	100	100	100	100
4. Corn or grain sorghum.....	67	66	73	75
Oats	15	20	20	20
Tankage	8	5	7	5
Linseed meal, soybeans, or cotton- seed meal	5	4	.	.
Alfalfa hay	5	5	.	.
Total	100	100	100	100

When skim milk is available the tankage and oil meal may be reduced one-half provided the pigs get one-fourth gallon of skim milk daily on pasture and one-half gallon daily in dry lot.

Brood Sows, Gilts, and Boars

An excellent ration for pregnant brood sows and gilts is merely sufficient corn or other grain, with choice legume hay in a rack, and either 0.25 to 0.35 pound per head daily of tankage or one-half gallon skim milk or buttermilk per head daily. Enough grain should be fed to keep them gaining but not excessively fat at farrowing time.

The following mixtures are also excellent for brood sows, gilts, and boars. For sows not on pasture that are nursing litters it may be wise to reduce the amount of legume hay in the mixture to 5 pounds per 100 pounds of mixture.

	Not on pasture Lbs.	On pasture Lbs.
1. Corn or grain sorghum.....	82	92
Tankage	4	4
Linseed meal, soybean oil meal, or cottonseed meal.....	4	4
Legume hay	10	.
Total	100	100
2. Barley or wheat.....	87	98
Tankage	3	2
Legume hay	10	.
Total	100	100
3. Corn or grain sorghum.....	67	72
Wheat standard middlings.....	20	25
Tankage	3	3
Legume hay	10	.
Total	100	100
4. Corn or grain sorghum.....	61	71
Oats	25	25
Tankage, meat scraps.....	4	4
Legume hay	10	.
Total	100	100

The tankage and oil meals may be omitted provided one-half gallon of skim milk or buttermilk per head daily is provided.

EQUIPMENT

Housing. 4-H club members can usually find a suitable shed on the farm for farrowing purposes. However, it is not always convenient to pasture and as the hog project increases in size more equipment may be necessary. The single A-type, "modified" A-type, or the two-sow house are preferable. They are easy to clean and easy to move. This permits use of clean ground each year and transfer from one farm to another. In addition the number can be expanded readily as the hog herd increases in size.

Shade. Hogs on pasture require shade. If no natural shade is available an inexpensive shelter can be made by setting four posts in the ground in a square area. A covering of straw on wire netting or poles over the posts furnishes cool comfortable shade.

Watering. Water is usually carried or hauled to the hogs. A barrel or two in a wagon or on a sled plus a barrel waterer in the field is probably the simplest method of watering. A constant supply of water is essential to thrifty hog production and some method of self-watering is desirable.

Feeders. Self-feeders save labor and promote faster gains. A simple feeder can be made from a steel barrel. Cut both ends out and wire a mower wheel or some similar wheel to one end. Place on a wood platform and cover with a wooden cover large enough to protect the feed from rain and snow. As the number of hogs increase, a more substantial feeder should be procured.

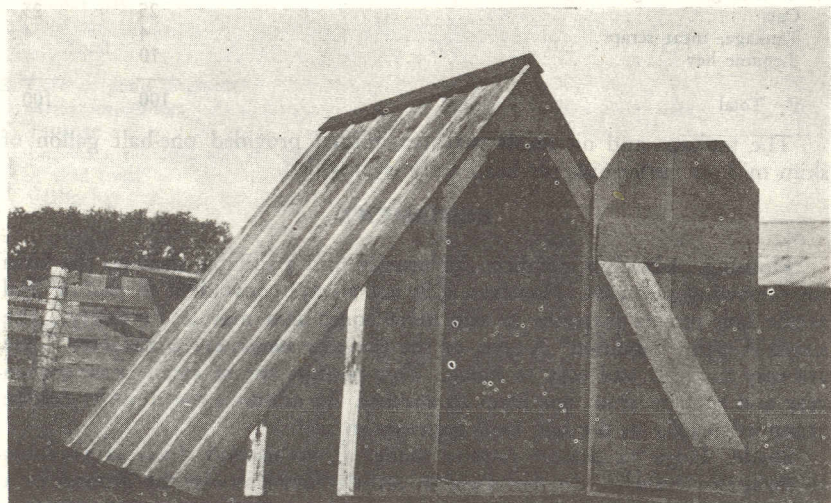
DISEASE AND SANITATION

Most diseases affecting hogs are filth bred. Cholera and swine erysipelas can be controlled by vaccination. All hogs should be immunized against cholera. Treatment for erysipelas should be discussed with a reliable veterinarian, since treatment is in the development stage and some changes may have been made in the method of control.

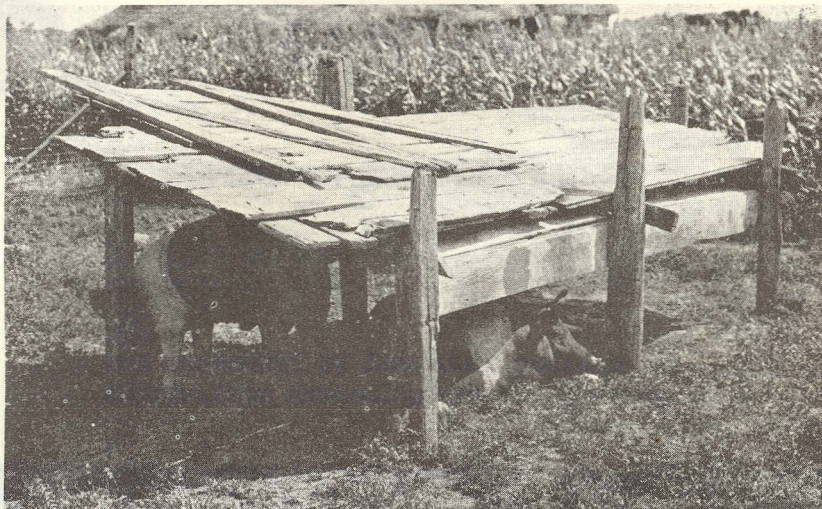
Other common diseases can be effectively controlled by following a strict sanitation program in management of the herd. The following steps should be followed to insure healthy thrifty hogs:

1. **Farrow Pigs in Clean Houses.** Floors and side walls should be cleaned and scrubbed with boiling lye water. Houses without floors and portable houses should be located on clean ground.

2. **Clean the Sow** before putting her in the clean farrowing pen. Warm water and soap should be used. Care should be used to get dirt away from the udder and feet. Pigs are apt to pick up worm eggs and other infections harbored in the dirt around the udder.



A convenient portable house for the 4-H Club litter.



An inexpensive shade for pigs on pasture.

3. Raise Pigs on Clean Ground. Ground that has not had hogs on it for at least two years and that has been cultivated during that time is best. Fields that catch the drainage from old hog lots are not suitable. When a permanent or central farrowing house is used, the pigs should be kept out of old lots and confined close to the house until they can be moved to clean pasture.

4. Haul the Sow and Pigs to Clean Ground. It is easy for pigs to pick up many pests and parasites when they are driven through old infested lots on their way to clean pasture.

5. Change Bedding Often and provide plenty of **Direct Sunshine.**