

THE SOW AND LITTER

4-H Project



If you choose the sow and litter as a 4-H project you can make it very profitable, especially if you are willing to do a good job as described in this circular. Your success, of course, will depend to some extent on the farm on which you live.

Before deciding on a hog project you should think of these three questions:

1. Do you have approximately 150 bushels of corn and 1000 pounds of protein supplement on hand, or can you buy sufficient feed at a reasonable price to complete your project?
2. Do you have enough good hog pasture such as alfalfa, red

clover, sweet clover, rape and oats, lespedeza, or bluegrass on which no hogs have been kept for three years? It will take at least $\frac{1}{2}$ acre for each sow and litter that you expect to work with.

3. Do you know where you can get suitable breeding stock?

SELECTING BREEDING STOCK

A Good Sow or Gilt is Important.—The profit made from the sow and litter project will be largely determined by the number and kind of pigs the sow farrows and saves. This means that the 4-H member should pay close attention to choosing a sow or gilt that will be likely to produce a large litter of good quality pigs.

The breed of hogs you raise will depend on your own preference, and on the kind of good breeding stock you can get in your community.

A sow's ability to produce large litters and suckle them well is inherited—that is, it comes from her parent stock. Therefore, brood sows should be chosen from large litters that had a heavy weight at weaning time. Sows should have at least twelve teats and should have good temperament, or in other words, be gentle and easily handled. In many instances it may be wiser to select a young sow that has already produced one or two large litters of pigs and demonstrated her ability to suckle them well, especially if the project is to be entered in ton litter competition.

A gilt should be at least eight months old, in good breeding condition—that is, neither too fat nor too thin, and weigh 200 to 300 pounds. A yearling sow in proper breeding condition will weigh approximately 400 pounds.

To produce pigs that will develop into "market toppers" or show hogs, the sow should be a well bred, feminine, quality individual, possessing the following characteristics:

1. Moderate length.
2. Well arched back.
3. Uniformly wide back and loin.
4. Short straight legs set squarely under the corners of the body, standing well up on her toes.
5. Heavy hams.
6. Smooth over shoulders.
7. Wide, deep chest as shown by width between forelegs and large heart girth.
8. Neat, trim head and jowl.
9. Deep sides with a trim, straight underline.
10. Twelve or more prominent, well placed teats.

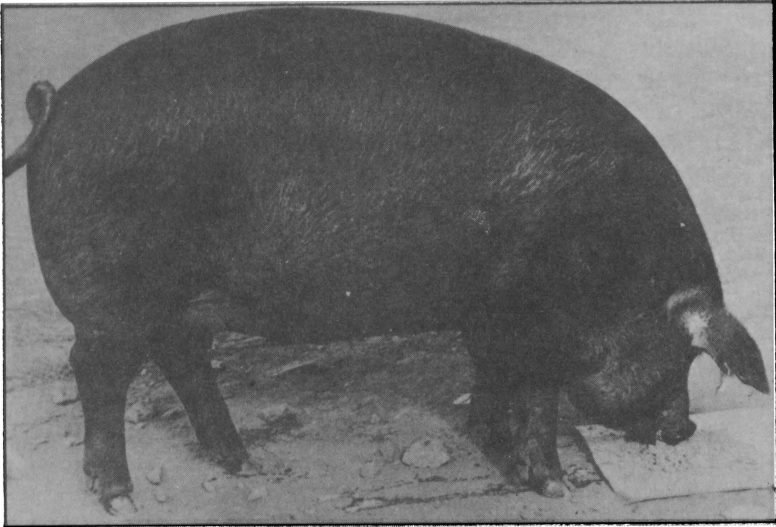


Fig. 2.—Good type of gilt for your 4-H project.

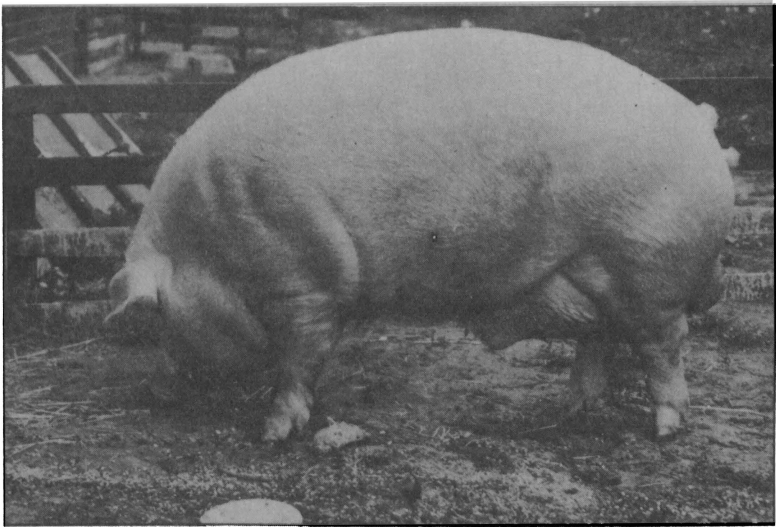


Fig. 3.—A good type of boar.

Choosing the Boar.—The better the sow, the more important it is to breed her to the best boar obtainable. The boar should be registered or out of registered stock and possess the same general characteristics described for the sow or gilt, except he should show masculinity, as evidenced by more ruggedness, thickness, heavier bone, and more size.

The boar likewise should be out of a large litter that had a heavy

weight at weaning time. He should be eight months or more of age and weigh 250 pounds or more at breeding time.

If there is a purebred breeder in your neighborhood who has a good purebred boar that has shown his ability to sire good pigs, and who will let you breed to this sire, it will be safer than depending on a young untried boar.

Crossbreeding.—The practice of crossbreeding or breeding a sow of one breed to a boar of another breed has found favor with some hog raisers in recent years, due to the fact that in some instances a certain amount of “hybrid vigor” or a tendency to grow and fatten a little faster may be obtained. Best results have usually been secured by breeding the more prolific, longer-bodied sows to a closely built, earlier maturing, easier feeding type boar.

A system of mating different breeds will not take the place of selection for individuality. The important consideration is to mate only prolific, well bred, desirable type sows and boars.

SUGGESTIONS FOR DEMONSTRATIONS

1. Selecting a breeding gilt.
2. Locating the parts of the hog by use of the score card.
3. Selecting a boar of the right type.

THE GESTATION PERIOD

When to Breed.—Probably the most desirable month in which to farrow spring pigs in Missouri is March. The weather is usually somewhat warmer, pigs can be put on pasture by the time they are four weeks old, and pigs farrowed in March can be made ready for market by early September, when normally the market is highest. Too, some 4-H shows in Missouri require that pigs be farrowed in March to be eligible to compete.

The normal period of gestation of a sow, or the time from breeding to farrowing, is 112 to 115 days. Therefore, in order to farrow during the first half of March, a sow should be bred between November 10 and 25.

Fall pigs should be farrowed in September. If the spring pigs are weaned from the sow by May 7, the sow can usually be rebred on May 10 to farrow about September 1.

Breeding to Farrowing.—At breeding time both the sow and the boar should be healthy, in good breeding condition, and gaining in weight. Breeding stock is likely to be more fertile if on pasture or being fed green leafy alfalfa or other legume hay in addition to grain.

The most important things to remember during this period are:

1. Feed a balanced ration containing minerals, proteins, and green feed, in addition to corn or other grains.
2. Be sure the sow gets plenty of exercise.

3. Accustom the sow to being handled so that she will be quiet and easily managed at farrowing time.

Pregnant gilts are still growing and therefore require more feed per unit weight than full grown sows. Sows and gilts fed a food ration will usually farrow and save large litters of strong pigs. Poor rations, on the other hand, often result in small litters of weak, undersized pigs. Even these, in many instances, are lost soon after farrowing from baby pig disease, scours, or other ailments.

SAMPLE RATION FOR PREGNANT SOWS

On Pasture

1 bu. corn	1 bu. corn
4 lbs. protein supplement:	1 bu. oats
Tankage, 2 parts	3 lbs. tankage
Oil meal, 1 part	

In Dry Lot

1 bu. corn	1 bu. corn
4 lbs. protein supplement:	7 lbs. protein supplement:
Tankage, 2 parts	Tankage, 2 parts
Oil meal, 1 part	Oil meal, 1 part
	Alfalfa meal, 1 part

Legume hay should be self-fed.

In addition to pasture or legume hay, feed gilts approximately 1½ to 2 lbs. of grain and supplement daily per 100 lbs. live weight.

In addition to pasture or legume hay, feed sows approximately 1 to 1½ lbs. of grain and supplement daily per 100 lbs. live weight.

PREPARATION FOR FARROWING

The date the sow is expected to farrow should be set down, and a suitable farrowing pen prepared for her at least a week before that date. The sow should be placed in her new quarters a few days before farrowing, so that she will become accustomed to them and will not become nervous and excitable.

Provide a Suitable House or Farrowing Pen.—Probably the most popular farrowing house with Missouri hog breeders and 4-H Club members is the Modified A-Type house described in Missouri Extension Circular 436. This house is 6 x 8 feet, and has a pig rail 8 inches from the floor around the wall to prevent the sow from overlaying her pigs. Overlaying causes greater loss of pigs between farrowing and weaning than any other single factor. Therefore, it pays to do everything possible to prevent it.

If pigs are to be kept healthy and free from worms and disease, the farrowing pen should be thoroughly scrubbed with hot lye water mixed at the rate of 1 lb. lye to 12 gallons of water. The house should then be located on clean ground and a pen built in front of it. If the

weather is cold, dirt should be banked up around the sides of the house to make the floor warm, and hay or fodder piled around the north, east, and west sides.



Fig. 4.—Cleaning the farrowing house.

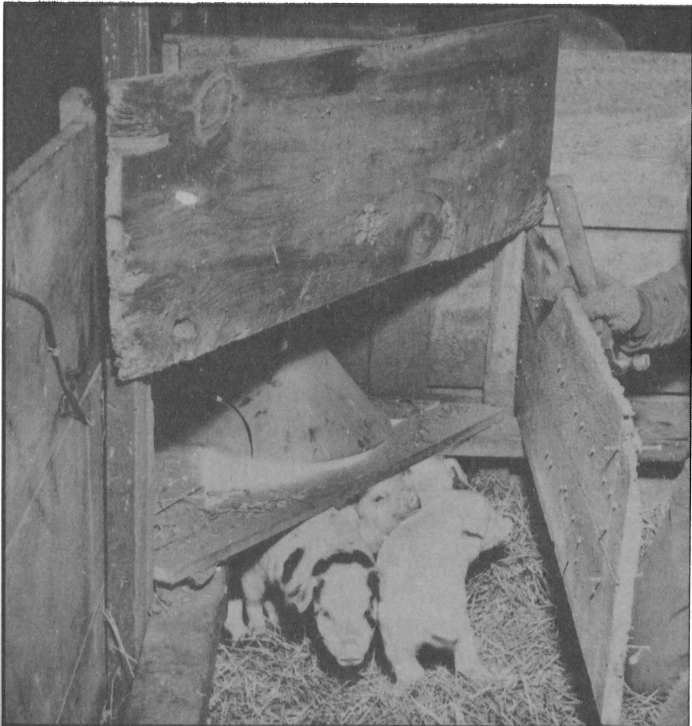


Fig. 5.—An electric pig brooder.

In extremely cold weather, it might be better to farrow the sow in a stall in the barn, a brooder house, or some similar place, taking the precaution of cleaning thoroughly with lye water and installing pig rails as described above.

Use a Pig Brooder in Cold Weather.—If you have electricity on the farm, you should by all means make a pig brooder like the one illustrated below. The County Agent can furnish a more detailed plan. In cold weather this device will save many pigs.

Bedding is Important.—The house should be bedded with some sort of material that is fine and tends to pack closely, such as wheat chaff, cut straw, or shredded corn stover. A small amount, about a bushel should be used—just enough to keep the house dry. The quantity should not be increased for a day or two after the sow farrows, but should be changed often enough to keep it dry. Too much bedding is likely to cause more pigs to be overlaid or smothered.

Place Sow in Her New Quarters.—About a week before she is due to farrow, the sow should be placed in her new quarters. This is important so that she will have had time to become used to them and will not be restless and try to break out. A restless sow at farrowing time is not likely to save as many of her pigs as one with a quiet disposition.

Wash the Sow.—Before being placed in her clean pen, the sow should have her sides and udder thoroughly scrubbed with a brush and warm soapy water so that the pigs will not take in a lot of worm eggs with their first meal. In cold weather, of course, the sow should be brushed dry after washing. Gentle sows that are used to being handled should not cause much trouble when being washed.

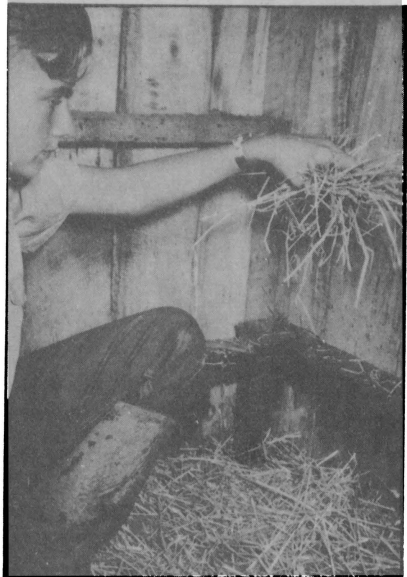


Fig. 6.—A bushel of bedding is enough.

SUGGESTED DEMONSTRATIONS

1. Feeding pregnant sows or gilts.
2. Scrubbing the farrowing pen.
3. Installing pig rails in farrowing house.
4. Making a pig brooder.
5. Bedding the farrowing pen.

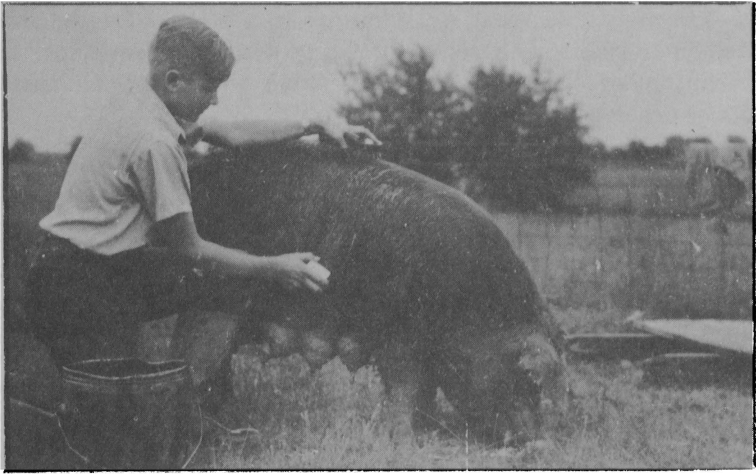


Fig. 7.—Wash your sow in soap and water before putting her in the farrowing house.

FARROWING

Cut Down on Feed and Furnish Water.—Two or three days before farrowing, it is recommended that the bulk in the ration be increased, by adding bran or oats to make up one-half or more of the feed. This is important to make the feed more laxative and prevent excessive fever in the sow at farrowing time. The sow should be furnished all the clean water she will drink. In cold weather, the chill should be removed from the water so she will be more apt to drink the amount needed.

During the first 24 hours after farrowing, the sow may be fed a medium slop of bran and water to prevent her from becoming restless and injuring the pigs.

An Attendant is Necessary.—It is a good practice to watch the sow for signs that she is going to farrow, such as restlessness and making up her bed, and be present at the time the pigs are born. This is particularly true in cold weather or if it is a gilt that is farrowing.

In cold weather, pigs may be placed under the brooder, if there is one, to dry off. Often a jug of hot water is placed in a tub or basket lined with sacks, and the attendant places the pigs in this to dry. They are then put back with the sow to nurse.

To revive pigs that have become chilled, dip them (all but the head) for two minutes in warm water in which you can just hold your elbow, then dry them thoroughly.

Some 4-H Club members, who are in ton litter contests and desire to save all the pigs where the sow farrows an extremely large litter,

keep one-half the pigs away from the sow and change them every two hours for the first few days until the pigs are stronger and not so likely to be overlaid by the sow.

SUGGESTED DEMONSTRATIONS

1. Preparation of the movable farrowing house.
2. Management of the sow at farrowing time.

CARE OF THE SOW AND LITTER

Clip the Needle Teeth.—Pigs are born with eight small, sharp teeth usually called needle or black teeth, two on each side of the upper and lower jaws. These are of no benefit, but harmful to pigs and sow. When fighting for a place at the udder, the pigs cut the sides of each other's heads and injure the sow's udder. Therefore, it is a good practice to remove these sharp teeth when the pigs are one to three days old. A pair of pliers or forceps made especially for this job are satisfactory. Care should be taken to remove the teeth only and not to injure the gums.

Ear Mark.—In order to identify the pigs later, they should be ear marked. This can be done with a leather punch, scissors, or knife. A regular ear notcher is preferable, however. Below is an example of a system which may be used.

Notches on the lower edge of the left ear beginning close to the

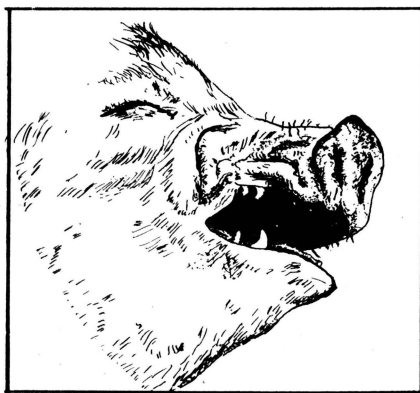


Fig. 8.—Clip off the pig's needle teeth.

head stand for 1-3-5 respectively. The right ear on the lower side is numbered 10-30-50. The notches on the upper edge would mean 2-4-6 on the left ear and 20-40-60 on the right ear. Simply add the notches together to get your number.

Prevent Anemia by Placing Sod in Pen.—Sow's milk is low in iron

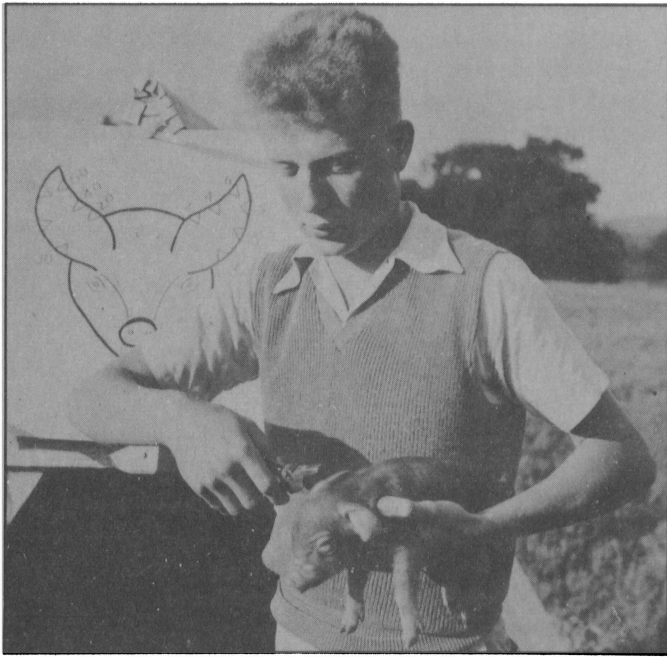


Fig. 9.—Ear mark each litter so you will know every pig.

and copper, which are essential elements in the formation of hemoglobin in the pig's blood. Pigs farrowed on concrete or surfaced floors often develop anemia unless these minerals are supplied. A piece of fresh sod placed in the pen where the pigs can root in it will supply sufficient amounts of these minerals, or a solution of copper sulphate (bluestone) and iron sulphate (coppers) should be mixed and painted on the sow's udder each day. This solution should be made as follows: Dissolve $1\frac{1}{4}$ lbs. of copperas and 1 to 2 ounces of bluestone in 1 gallon of hot, soft water and store this mixture in a glass container.

As a precautionary measure, it might be best to use both the sod and the solution, especially if pigs are to be kept on a floor for any length of time.

Feed the Sow and Litter Properly.—The period during which the sow is suckling pigs is the greatest drain on the sow's condition and requires the use of a good ration if she is to suckle well and not become too thin.

The sow should receive a light feed approximately twenty-four hours after farrowing and the ration gradually increased as the pigs grow older and the milk requirements of the pigs become greater. Usually the pigs will be two weeks old before the sow is on full feed.

Proteins, minerals, and vitamins make up an important part of the milk. It is, therefore, necessary to make sure that adequate amounts of these are in the sow's ration while she is suckling the litter. The following rations are examples of the kind that should be fed.

SAMPLE RATIONS FOR SOWS SUCKLING PIGS

Corn	—1 bushel	or	Corn	—1 bushel
Supplement:	—7 lbs.		Supplement:	—5-6 lbs.
2 parts tankage			2 parts tankage	
1 part oil meal			1 part oil meal	
1 part alfalfa meal			with	
			Legume hay self fed, or pasture.	

If ground oats, shorts, or bran are available, they may be substituted for a part of the corn in the above rations.

Sows on good legume pasture may be fed a slightly smaller proportion of protein supplement.

If not farrowed on clean ground, the pigs, with the sow, should be moved to clean ground and good pasture as early as possible.

Creep Feed the Pigs.—When the pigs begin to eat with the sow at 3 to 4 weeks of age, they should be fed some grain. A creep similar to the one illustrated in the picture should be constructed to keep the sow out and let the pigs have free access to the feed.

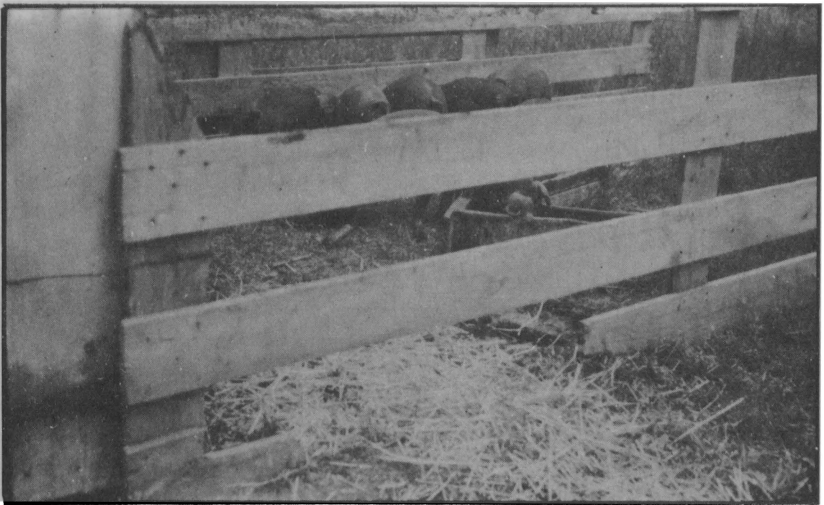


Fig. 10.—A creep for feeding pigs.

Cracked corn or shelled corn and skim milk make a good ration for suckling pigs.

Castrate at Three Days to Three Weeks.—When the pigs are three days to three weeks old, they should be castrated. They will suffer less setback at this age than at any other time.

Ask your project leader to give a demonstration of castrating.

Important! It is essential in this operation to be clean and to make the incisions low enough and large enough to allow good drainage. Use a good disinfectant such as some of the cresol compounds available at all drug stores, stock dip, phenol, etc., mixed at the recommended strength. Thoroughly wash the hands and knife in this solution; wash the scrotum of the pig with it before you begin.

A sunshiny day should be picked for this job if possible, and the pigs should be kept dry and away from manure or dirty hog wallows. Do not castrate pigs that are not in good healthy condition.

Vaccinate for Hog Cholera at Four to Five Weeks.—Outbreaks



Fig. 11.—Vaccination is cheap insurance.

of hog cholera can occasionally be expected in all parts of Missouri. Be safe. Don't be the one to lose because of your carelessness, when a few cents per head spent for vaccination will protect your pigs from this fatal disease.

4-H RECORD SOW AND LITTER

To be used with 4-H Circular 82



Name _____ Age _____

Address _____ County _____

Date Project Started _____

Name of 4-H Club _____

Project Leader _____

Club Activities

Club meetings attended during year..... _____

Project meetings attended..... _____

Number of demonstrations given at club or project meetings _____

county meetings _____, district or state meetings _____

Number of times judging work was done in local club _____

county _____, district _____, state _____

interstate _____,

Number of exhibits made in community _____, county _____,

district _____, state _____, interstate _____

Work done on supplementary activities: _____

Requirements

Own, feed and care for one or more purebred sows and develop the litter or litters to finished market hogs. In sections or in seasons when it is expedient to do so, the litter may be marketed as feeder pigs.

Project Goal

My goal for 194_ is to save all pigs farrowed and make them average _____ pounds at six months.

PRACTICES TO BE FOLLOWED

A check mark (✓) in the left hand column shows that I plan to carry out that practice. The check at the right shows that I did what I planned to do.

I Expect To

I Did

- Select one or more gilts or sows from a strain that usually farrows eight or more pigs to the litter.....
- Select one or more gilts or sows that have twelve good teats.....
- Select one or more gilts or sows that are of good type and feminine in character.....
- Select a thick meated registered boar of good type.....
- Select breeding stock that is immunized against cholera...

Keeping A Feed Record

- Set aside a bin, box or barrel for grain to be fed to my project animal or animals and to none other.....
- Weigh or measure out one or two months' supply of grain and put in my box and replenish when the supply gets low.
- Mix my protein supplement and place a bag of the mixture in or near the feed box.....
- Tack up a 4-H feed record sheet close by the feed box and set down the date, amount and value of all concentrates set aside for the project.....
- Start the feed record on my sow and litter project at the time the sow is bred.....
- Continue the feed record on the sow and litter up to the time of weaning and continue record on litter up to the time the pigs are marketed or the record is closed.....

Caring for Sow During the Gestation Period

- Feed the growing gilt a grain ration equal to 3% to 4% of her body weight.....
- Feed the mature sow a grain ration equal to 1 1/2% to 2% of her body weight.....
- Feed a grain ration that contains at least 10% of a high protein supplement.....
- Provide plenty of mineral feed consisting of equal parts of hard wood ashes and salt.....
- Follow the practice of increasing the oats or bran in the ration beginning on the 105th day and continuing until the ration is all oats or bran by the 110th day.....
- Provide green feed at all times in the form of pasture or bright legume hay.....
- Exercise the sow every day up to time of farrowing.....

Planning the Spring Pasture

- Fence off a small portion of a clover or alfalfa field for the sow and litter.....
- Use a small pasture that has been seeded to small grain for pasture.....
- Seed oats and Dwarf Essex rape in the spring for pasture
- Fence off a section of barley, wheat or rye field for pasture.....

- ___ Use steel posts and woven wire for pasture plot.....
- ___ Use wood posts and woven wire for pasture lot
- ___ Use an electric fence.....

Planning the Equipment

- ___ Build an individual hog house according to specifications furnished by my county agent.....
- ___ Build a temporary farrowing house out of material at hand.....
- ___ Arrange with parent to use a pen in a permanent farrowing house.....
- ___ Use a guard rail in the farrowing house.....
- ___ Use artificial heat such as a jug of hot water in a barrel or an electric pig brooder when the temperature ranges below 55° Fahrenheit.....
- ___ Build a self feeder for use during the summer.....
- ___ Borrow a self feeder from Dad to use while feeding on pasture.....

Preparing for the Farrow

- ___ Move the individual farrowing house to a convenient and protected spot on the farmstead where there have been no hogs for 18 months.....
- ___ Scrub the farrowing pen with lye water before putting the sow in it.....
- ___ Wash the sow with soap and water before putting her into her farrowing quarters.....
- ___ Bed the floor of the farrowing house sparingly using only about a bran sack full of short or chopped straw.....
- ___ Continue to exercise the sow daily without allowing her to take contaminated dirt back into the farrowing house with her.....

Caring for the Sow and Litter During the Suckling Period

- ___ Protect my new born pigs from chilling.....
- ___ Clip needle teeth.....
- ___ Provide clean water but withhold all feed and slop from the sow for 12-18 hours after farrowing.....
- ___ Keep the farrowing pen dry, warm and clean.....
- ___ Put a piece of sod six inches square in the farrowing house on the third day.....
- ___ Full feed the sow during the suckling period working up to full feed gradually from the third day to the end of the third week.....
- ___ Feed daily one to one and one-half pounds of protein supplement such as soybean meal and tankage equal parts with what corn or ground wheat is needed.....
- ___ Earmark the litter when it is 3 to 5 days old.....
- ___ Castrate boar pigs at two to three weeks.....
- ___ Vaccinate as soon as castrated pigs are well healed.....
- ___ Start month old pigs on a creep feed of 8 parts corn and one part tankage or tankage and soybean meal half and half.....
- ___ Move the farrowing house, if necessary, to get it out on clean ground - ground where no hogs have been for 12 to 18 months.....
- ___ Move litter farrowed in permanent farrowing house to pasture in a crate or box to keep them off the hog lot ground.....

- ___ Get the pigs out in the sun and on clean ground in 3 to 5 days if possible.....
- ___ Provide pasture or green legume hay at all times.....
- ___ At no time, allow pigs on old hog lots or ground that the water from old hog lots drain over or through.....
- ___ Keep troughs clean at all times.....

Caring for Pigs After Weaning

- ___ Feed breeding gilt or gilts 3% - 4% of their weight daily from weaning time to breeding time.....
- ___ Full feed market hogs from weaning to market.....
- ___ Self feed a ration of corn, tankage and soybean meal on pasture.....
- ___ Feed 8 parts corn and 1 part supplement consisting of equal parts tankage, soybean meal and alfalfa meal in dry lot.....
- ___ Keep a good supply of water before hogs at all times.....
- ___ Use a small hand hurdle and a flapper when driving or loading hogs.....
- ___ Bed truck with wet sand when moving hogs in hot weather.....
- ___ Bed truck with straw or sand or cinders in cold weather.....

Completing the Feed Record

- ___ Total the grain and supplement charged against the project and subtract amount left at the time the record is closed.....
- ___ Transfer feed and cost totals from the feed record sheet to the financial summary in this record book.....
- ___ Calculate cost of a pound of gain, average daily gain, and feed fed per pound gain at the bottom of the feed record sheets and include these figures in my story of the project...

Summary

Value of original animal or animals.....	
Value of corn fed.....	
Value of supplement fed.....	
Cost of vaccination.....	
Other expense.....	
Total cost	
Value of original animals at close of project.....	
Number of gilts retained for breeding purposes _____ value.....	
Number of market hogs sold _____ value.....	
Number of spring farrow not sold _____ value.....	
Number of fall pigs on hand _____ value.....	
Total	

Farrowing Record

- Date of spring farrow _____
- Number of pigs saved.....
- Number of pigs weaned.....
- Date of fall farrow _____
- Number of pigs saved.....
- Date record closed _____

Signed _____

Immunity can usually be obtained while the pigs are about four to five weeks old and are nursing their mothers. If the vaccination is to be successful, the pig must be healthy or else severe losses may occur following vaccination. Do not vaccinate until the pig has healed from his castration (about two weeks after castration). Do not vaccinate pigs suffering from swine erysipelas, necro, or other diseases.

This job should be done by a veterinarian, since if it is to be successful, careful handling of the serum and virus is required and the proper amounts of each should be injected.

The most common treatment is called the "double treatment" and consists of injecting into the muscle or beneath the skin a small amount of the virus which causes the disease and then injecting into the body cavity or beneath the skin under the flank the proper dosage of serum which prevents the disease from becoming too severe.

Treat for Lice and Mange.—Most pigs will sooner or later become infested with lice unless treated to prevent it. Hogs infested with lice will often require an extra bushel of corn to reach market condition, and of course will not have the healthy hair and condition to make a good appearance in the show ring. Lice can be most easily eradicated by regular sprinkling with used crank case oil or crude petroleum.

Mange is caused by a tiny mite that burrows into the skin, causing lesions on the skin and loss of hair. First symptoms are noticed low on the sides and on the lower hams. The hair comes out and the skin becomes rough and scaly.

Treatment consists of mixing liquid lime sulphur and water at the rate of 1 gallon of lime sulphur to 12 gallons of water. Heat this mixture to body temperature, about 102 degrees F.; dip pigs in a barrel, douse the head and ears a couple of times, and hold the pig (excepting, of course, the head) in the warm solution for about 2 minutes. The beds, pens, troughs, house walls, floors, etc., should be thoroughly cleaned and disinfected with a good dip solution.

CARE OF WEANLING PIGS

From weaning to 100 lbs. is a critical time in the pig's life. When the pigs are first weaned they are deprived of the mother's milk and unless a good ration containing enough protein and mineral is supplied, setbacks often occur in the form of disease.

Pigs should be weaned when they are approximately eight weeks old and should weigh at least 30 lbs. Weights of 50-60 lbs. are not unusual, depending on how good a "producer" the sow was, whether or not the pigs were creep fed, and if they were kept on clean pasture and are free of disease and parasites.

Two or three days before weaning the pigs, the sow's ration should

be cut in half. The sow should be fastened away from the pigs and the pigs left on pasture.

Sows will usually breed from 3 to 5 days after the pigs are weaned.

A large part of the pig's gain early in life is in the form of growth, which requires larger amounts of protein feeds such as tankage, meat scraps, oil meal, and milk. Toward the end of the fattening period, the tendency of the hog is to fatten rather than grow, which calls for a larger proportion of carbonaceous feeds such as corn, wheat, and barley.

SAMPLE RATIONS FOR PIGS FROM WEANING TO 100 LBS.

On Pasture

1 bushel corn
 10 lbs. protein supplement:
 Tankage 2 parts
 Oil meal 1 part
 Mineral mixture fed free choice.

If maximum gains are desired, small amounts of such feeds as fish or liver meal, skim milk, buttermilk, or rolled oats may be added to the ration. (This is discussed in Missouri Bulletin 376.)

The above rations may be self fed in a self feeder, with hogs having free choice to corn, protein supplement, and a mineral mixture consisting of equal parts limestone, bone meal, and salt. Or the pigs may be hand fed three times per day all the corn they will clean up, and the protein supplement hand fed in a trough where all will have an equal chance.

Good pasture such as alfalfa, clover, or rape and oats should always be available to weanling pigs.

SUGGESTED DEMONSTRATIONS

1. Clipping needle teeth.
2. Ear marking pigs.
3. Weighing pigs individually.
4. Washing udder with bluestone and copperas.
5. Mixing ration for sow and litter.
6. Make a pig creep.
7. Castrate a pig.

FATTENING HOGS

(100 lbs. to market weight)

Older hogs do not require quite as much protein and vitamins in their feed as do younger hogs, since an increasingly larger proportion of their gain is in the form of fat. However, it is still necessary to have the proper amount in the ration. Experiments have shown that 1 lb. of protein supplement will replace 3-5 lbs. of corn in dry lot comparisons on hogs fed corn alone and corn plus protein supplement.

Feed Hogs on Pasture.—Experiments at the Missouri College of



Fig. 12.—Pigs in good clover pasture.

Agriculture show that good pasture will save approximately 15% of the feed required to finish hogs in dry lot, and that good pasture for hogs is worth from \$30 to \$50 per acre in terms of feed saved, with hogs at 10c per lb.

The best pastures for hogs, in the probable order of their value in making good gains, are:

1. Alfalfa.
2. Red clover.
3. Alsike clover.
4. Rape or rape-oats mixtures.
5. Sweet clover.
6. Lespedeza in the summer months.
7. Bluegrass in spring and fall.

SAMPLE RATIONS FOR FATTENING HOGS

On Pasture

1 bushel corn
4 lbs. tankage
Mineral

1 bushel corn
5 lbs. supplement:
Tankage 3 parts
Oil meal 1 part
Mineral

In Dry Lot

1 bushel corn
7 lbs. supplement:
Tankage 2 parts
Oil meal 1 part
Alfalfa meal 1 part
Mineral

1 bushel corn
5 lbs. supplement:
Tankage 2 parts
Oil meal 1 part
with
Legume hay self fed
Mineral

1 bushel corn
5 lbs. tankage
with
Legume hay
Mineral

These rations may be fed free choice in a self feeder, or the corn fed free choice and the supplement hand fed according to the number of pounds of grain the hogs are eating per day; or the hogs may be hand fed both grain and supplement in their proper ratio three times per day.

Showmen May Desire to Make Slight Changes.—In some cases where the hogs are to be shown and they are becoming somewhat “overdone” or too fat and wastey for best show ring performance, barley or wheat may be partially or wholly substituted for the corn. If this is done, the protein feed required will not be quite so high. Barley is not as efficient as corn in putting on gains, while wheat is slightly more efficient than corn. Both may often be more expensive. However, they tend to put on a more smooth, firm, and otherwise very desirable finish. These grains should be coarsely ground before feeding.

Also, the showman may find it desirable to finish his hogs in dry lot during the last month or two, as hogs on pasture tend to be not quite so trim in their middles or firm in their fleshing.

One should bear in mind that these practices may increase the cost per 100 lbs. gain, but might make some differences in the show ring performance of top quality individuals.



Fig. 13.—Automatic hog waterer.

Provide Shade and Water.—Shade and fresh clean water in abundance should be provided close to the feed if hogs are to gain fast, especially near the end of the feeding period and in hot weather.

If water is not piped into the hog pasture, it should be hauled

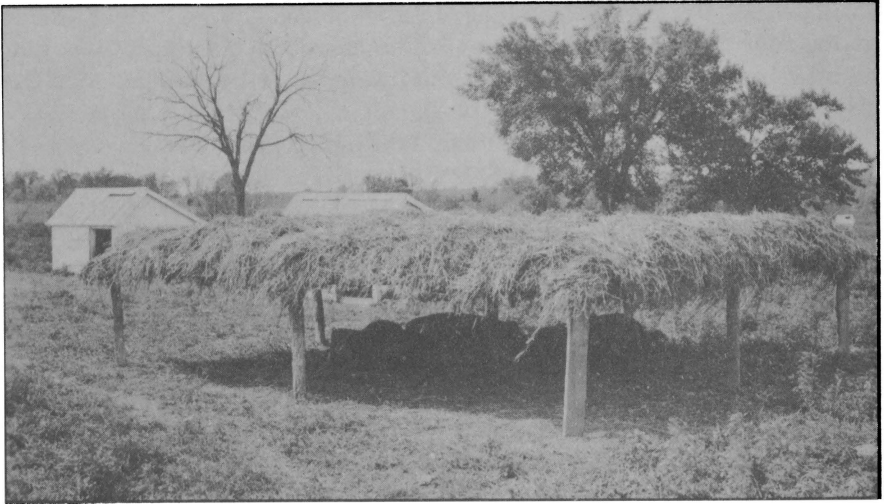


Fig. 14.—A good hog shade, and easy to build.

on a slide in a barrel or tank equipped with an automatic hog waterer, as shown in the picture. Plenty of clean water should be readily available close to the feed supply at all times.

Shade should also be close to the feed and water. If there is no natural shade such as from a tree, a constructed shade of some sort which will allow the breeze to flow under it from all sides should be provided in warm weather.

A dry shelter, free from drafts, should be provided in cold or wet weather.

SUGGESTED DEMONSTRATIONS

1. Ration for weanling pigs.
2. A simple mineral mixture for hogs.
3. Constructing a self feeder.
4. Constructing a movable hog waterer.

FITTING FOR SHOW

Fitting hogs for the show ring may be divided into two phases: at home before leaving for the show, and at the show.

At Home

The 4-H member who is a consistent winner at the shows begins the preparation and conditioning of his hogs many weeks ahead of time.

Trim the Feet.—The feet of the show herd should be kept trimmed. Use a sharp pocket knife and trim off the bottom of the hoof from the pad out toward the toe. The toes should be trimmed short so that the pig will be stronger in his pasterns and tend to walk up

on his toes. To straighten a leg, trim shortest the hoof on the side of the foot that you wish to turn. For example, if the pig toes out, trim the outside hoof closer than the inside; or if he toes in, keep the inside hoof trimmed shorter.

Begin keeping the feet trimmed while the pigs are small and keep a close watch on them to detect the need of further attention.

A few days before leaving for the show, give the feet a final trimming, not close enough to risk causing lameness, shape the feet with a rasp and smooth the outside of the hoofs with a scraper and a piece of fine sandpaper.

Exercise Show Hogs.—Hogs that have been given plenty of exercise tend to be up on their toes, firmer in their fleshing, stronger in their backs and loins, and have a more desirable style and carriage, thus making them not only more attractive but also much easier to show to advantage. They are not so likely to become tired and overheated in the show ring and are easier to move and handle.

Driving the pigs one-half mile to a mile while it is still cool early each morning, for a month or more, will accustom them to being handled and will insure adequate exercise.

Washing.—At least a week before show time, begin the process of cleaning up the pigs. First, all the dirt and scurf possible should be washed off with plain water, and then using plenty of soap and a good stiff brush, they should be given a good scrubbing. This process should be repeated as often as is necessary to remove all the dirt and scurf. The pen should then be kept well bedded with clean straw.

Preparation for Hauling.—Hogs should not be full when they are hauled. The last feed should be a light one, and all feed and water should be withheld for 4 to 6 hours before loading. The truck should be well bedded with straw or shavings, and if the weather is extremely warm, chunks of ice should be scattered on the floor of the truck.

At the Show

To insure best appearance in the show ring, hogs should arrive 48 hours or more before the competition begins. Upon unloading, a little water may be given and the pigs should be put into a well bedded pen and allowed to rest a few hours before being fed. They should then be offered only a very light feed of the same kind of ration to which they have been accustomed. The feed should be gradually increased each time until they are back on full feed by the time showing begins.

The pigs should be turned out of the pen following each feeding and driven up and down the alley for a few minutes to provide exercise.

Equipment Needed.—The following equipment will be necessary:

Feed troughs, a bucket, hand clippers, talcum powder, oil, sprinkling can, brushes, rags, a pig slapper or else a light whip, a hand hurdle, and a larger hinged hurdle or gate will also be convenient.

Grooming.—Pigs are usually shown with the ears clipped both inside and out and the tail clipped except for the brush on the end.

This should be done one or two days before the show.

Washing while at the show should be avoided if possible, as it may often lead to pneumonia or flu in cold, drafty barns. If a thorough job of cleaning was done before leaving home and the bedding has been replenished often, a good thorough job of brushing will usually suffice.

The colored breeds are usually oiled to add lustre to the hair. A commercial preparation may be used or a satisfactory mixture may be prepared by thinning down a pint of oil such as paraffin oil, cottonseed oil, olive oil, or mineral oil, with 4 ounces (about 8 tablespoonfuls) of alcohol. This should be applied in small amounts with a rag after the pigs have been thoroughly cleaned. White hogs should not be oiled, but are washed clean and dusted with talcum powder.

The feet may be scraped clean, and the outside of the hoofs smoothed with fine sandpaper and polished with oil, shellac, or any material that will give them a glossy surface.

Most of the grooming should be completed the day before entering the show ring, so that the pigs are disturbed as little as possible immediately preceding the show. To make a good appearance in the ring, hogs should be rested so that they are not so inclined to lie down while in the ring, tend to be weak in their backs, loins, feet and legs, and difficult to drive and handle.

The Big Moment.—All grooming and final touches should be completed several hours before you enter the ring. Let your pigs lie quietly in clean straw and don't let them be disturbed until it is your turn to enter the ring. Then, get them up and move them as quickly and easily as possible to the ring. Be sure to have plenty of assistance so that your pigs do not become mixed with those belonging to someone else, go the wrong way, or get excited. Carry your hand hurdle, whip, and brush with you. If the weather is warm, have someone bring a bucket or sprinkler can of water to you.

In group classes, get your pigs into their proper place and let them be as quiet as possible. When the judge comes to your pen, get them up promptly and move them so that he can get a good look at them. Be alert and take every opportunity to show your pigs to advantage.

In individual classes, keep your pig on the move but under control.

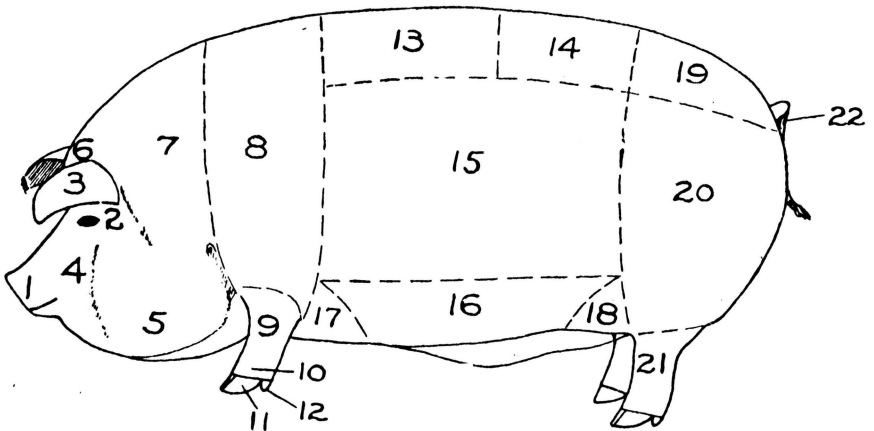
This is where training and conditioning weeks ahead of the show will pay off for you. Use a light whip and a hand hurdle to control him. Keep him in the judge's view as much as possible and by all means prevent your pig from getting into a fight with another pig. If he becomes hot, keep his nose sprinkled with cool water.

If you win your class and need to bring him back later for the championship, get him back to his pen, give him a drink, and let him lie down until called out again.

And remember, whether you win or lose, take the same good care of your pigs until the show and sale are completed.

SUGGESTED DEMONSTRATIONS

1. Trimming feet.
2. Grooming pigs for show.
 - a. Clipping.
 - b. Washing.
 - c. Oiling, etc.
3. Making a pig hurdle.
4. Showing hogs.
5. How to show hogs in the ring.



Points of the Hog.

- | | | | |
|----------|--------------|----------------|----------------|
| 1. Snout | 7. Neck | 13. Back | 18. Hind flank |
| 2. Eye | 8. Shoulder | 14. Lion | 19. Rump |
| 3. Ear | 9. Fore leg | 15. Side | 20. Ham |
| 4. Cheek | 10. Pastern | 16. Belly | 21. Hind leg |
| 5. Jowl | 11. Toes | 17. Fore flank | 22. Tail |
| 6. Poll | 12. Dew claw | | |

Fig. 15.—Diagram showing the points of a hog.

SCORE CARD FOR LARD HOGS—FAT BARROWS

SCALE OF POINTS

Score Member's Score
Possible

Age—estimated-----yrs., actual-----yrs.

GENERAL APPEARANCE—26 Points.

Weight—estimated-----lbs., actual-----lbs.

score according to age ----- 6 -----

Form, arched back, straight underline; deep, broad, medium length, symmetrical, compact, standing squarely on legs -----

8 -----

Quality, bone of firm texture, fine skin, silky hair, clearly defined features and joints, mellow touch

6 -----

Condition, thick, even, covering of firm flesh, especially in regions of valuable cuts; indicating finish; light in offal -----

6 -----

HEAD AND NECK—8 Points.

Snout, short, not coarse -----

1 -----

Face, short, broad, cheeks full -----

1 -----

Eyes, large, full, clear, bright, wide apart, not obscured by wrinkles -----

1 -----

Forehead, broad -----

1 -----

Ears, well carried, fine, medium size -----

1 -----

Jowls, full, firm, broad, neat -----

1 -----

Neck, thick, medium length, somewhat arched, neatly joined to shoulders -----

2 -----

FOREQUARTERS—10 Points.

Shoulders, broad, deep, full, compact, covered with firm flesh -----

6 -----

Breadth, wide, deep, breast bone advanced -----

2 -----

Legs, straight, strong, wide apart, pasterns short and strong, feet strong -----

2 -----

BODY—33 Points.

Chest, deep, broad, girth large, foreflank full -----

4 -----

Back, broad, slightly arched, medium length, thickly, evenly and firmly fleshed -----

8 -----

Sides, deep, medium length, closely ribbed, thickly, evenly and firmly fleshed -----

8 -----

Loin, broad, strong, medium length, thickly, evenly and firmly fleshed -----

8 -----

Belly, straight, proportionate width, firmly fleshed -----

3 -----

Flanks, full, low -----

2 -----

HINDQUARTERS—23 Points.

Hips, smoothly covered, proportionate width -----

3 -----

Rump, long, rounding slightly from loin to root of tail, width well carried back, thickly, evenly and firmly fleshed -----

8 -----

Hams, deep, wide, thickly, evenly and firmly fleshed -----

10 -----

Legs, straight, strong; pasterns short and strong, feet strong -----

2 -----

Total ----- 100 -----

Disqualifications -----

Animal----- Date-----

Club Member----- Standing-----

SOME COMMON SWINE DISEASES AND THEIR CONTROL

Worm Infestation

Hogs are infested with many different types of internal parasites or worms which cause slow gains, lack of thrift, more susceptibility to diseases, and sometimes death. Included among these are roundworm, tape worm, stomach worm, lung worm, threadworm, flukes, and others. Feeding hogs infested with worms is a serious waste of feed. Most trouble from internal parasites can be prevented by raising pigs on clean ground. This is much better than using medicines and remedies to try to keep down losses, since oftentimes considerable damage has already been done by the parasite within the body before it reaches a stage where medicinal treatments will eliminate it. These medicinal treatments are effective, however, in helping hogs recover from infestations.

Most serious and most common of these parasites is the roundworm. Below is a diagram showing its life history.

There are several methods of eliminating roundworms, which will be discussed below.

Sodium Fluoride is a Good Remedy.—Recent experiments by the Bureau of Animal Industry have shown sodium fluoride to be one of the most effective drugs in ridding hogs of roundworms. This material is inexpensive and is commonly used in dusting poultry for lice or in killing cockroaches around the home.

Sodium fluoride powder is mixed with dry ground feed at the rate of 1 lb. of technical grade powder to 100 lbs. of feed. Hogs are fed all they will clean up for one day. Hogs that are not accustomed to eating ground feed should be fed some ground feed such as wheat or corn for 4 or 5 days before treatment, so they will be accustomed to it and will thus eat a sufficient amount of the drug to be effective.

Oil of American Wormseed and Castor Oil for Pigs.—A treatment for light pigs that has long been in use is to mix 8 parts of castor oil with 1 part of oil of American wormseed (or oil of chenopodium). Pigs should be kept off feed 18 hours and then drenched with this mixture at the rate of $\frac{1}{2}$ oz. (about 1 teaspoonful) per 50 lbs. weight. The pig should be set up on the rump, the corner of the mouth pried open with a bolt, and the oil placed far back on the tongue with a spoon or dosing syringe, being very careful not to let it be drawn into the lungs while the pig is squealing.

Hog Cholera

Hog cholera causes a greater death loss than any other disease among hogs in Missouri. It is highly contagious and affects swine of all ages. The most common symptoms of hogs cholera are sudden

onset, loss of appetite, fever, and weakness. Pigs suffering from cholera have a characteristic dejected appearance, standing with head down and tail drooping, and have a gummy secretion about the eyes. Pigs sick from cholera usually die within 7 to 10 days. Unless prompt measures are taken, it will wipe out the whole herd.

Any pigs that go off feed should be separated from the rest of the herd and if hog cholera is suspected, a veterinarian should be consulted at once to make an accurate diagnosis and prescribe the proper treatment.

The best means of preventing hog cholera is vaccination at an early age, with the serum and virus as described earlier in this bulletin.

Swine Erysipelas

Swine erysipelas causes serious losses on certain farms in some portions of the state. An accurate diagnosis of this disease is difficult, due to the wide variation in the symptoms and effects, and calls for the services of a veterinarian. Some common symptoms which indicate the presence of the disease are: diamond shaped skin lesions, evidence of pain in moving, enlarged joints, high temperature, sloughing of patches of skin, tail, and ears, and the typical dried up appearance of chronic cases.

The organism which causes the disease will oftentimes live in the soil for several years and cause reappearance of the disease from time to time. Control measures consist of using clean ground, being careful not to buy infected stock, and treatment by a competent veterinarian in case of outbreaks.

Necro (Necrotic Enteritis) and Other Hog Lot Diseases.—Hogs that are raised on infected pastures and lots in which hogs have been kept during previous years often become infected with scours, bloody dysentery, and other forms of stomach and intestinal inflammation. The principal disease among these is the one commonly called "necro". The best method of control is to raise hogs on clean ground on which no hogs have been kept during the past three years.

Thumps.—Pigs are often observed to pant for breath with a characteristic thumping motion. This is commonly called "thumps". It is a characteristic symptom of baby pigs suffering from anemia, which has been discussed in a previous paragraph. In older pigs it may be caused by a heavy infestation of worm larvae which are present in the lungs.

If the precautions of placing clean sod in the pen with baby pigs and of keeping pigs free from worms by using clean ground are observed, this condition is not likely to appear.

Swine Flu and Pneumonia.—Damp, cold, drafty beds are an im-

portant factor in causing troubles from pneumonia and flu and often contribute to causing the disease called swine plague or hemorrhagic septicemia. To guard against these diseases, keep hogs in a dry, well bedded, well ventilated shed during winter weather. The shed should be open to the south, tight on all three sides and have a low roof. Lowering the roof by means of a straw loft is often a good practice. One should also avoid oiling hogs in cold or damp weather.

If hogs appear out of condition, cough, have a discharge about the eyes and nostrils, or go off feed, they should be isolated and a veterinarian consulted at once.

SUGGESTED DEMONSTRATIONS

1. Treating hogs for worms.
2. Preparing a home mixed worm remedy.
3. A hog pasture rotation that will prevent disease and worm infestations.
4. A hog house that will prevent flu and pneumonia.