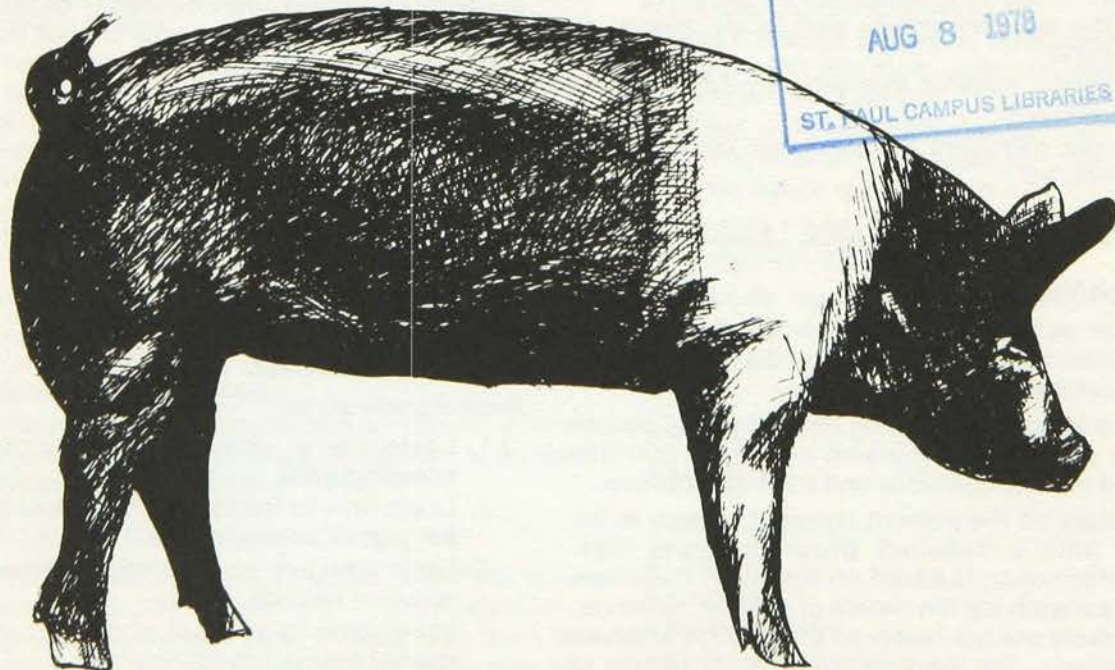


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# MINNESOTA SWINE LEADER'S GUIDE

AGRICULTURAL EXTENSION SERVICE UNIVERSITY OF MINNESOTA



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# MINNESOTA SWINE LEADER'S GUIDE

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Youth Development

Being a 4-H project leader can be very satisfying, or it can be very frustrating. For a satisfying experience, you should:

- a. Plan the learning activity well (tours, clinics, or meetings).
- b. Find all the material that will support what you want to teach.
- c. Keep the members involved and busy to hold their interest.

## TEACHING ANIMAL SCIENCE LESSONS

### Why Teach Youth?

As a leader, you are helping boys and girls develop trained minds, sound bodies, skilled hands, and good citizenship attitudes.

By teaching lessons, you will be helping young people appreciate the value of research and learn scientific methods of making decisions and solving problems.

A recent study on the present status of science in the 4-H meat animal livestock program found that: "Project information is based on research; therefore, members are applying the results of science. However, most members are not aware of the science involved in their projects. The work of scientists or results of research are seldom mentioned in the publication. The attempts to stress science in livestock projects are rather isolated and most have not been followed through." Science in 4-H Study, National 4-H Foundation.

## I. PURPOSES OF THE 4-H SWINE PROJECT ARE TO:

1. Learn to select a gilt and barrow.
2. Learn how to profitably raise pigs which will produce high quality, lean, juicy pork.
3. Assume project responsibility; learn about cost, returns, marketing, and record keeping.
4. Learn about swine production and pork products.
5. Practice good sportsmanship in competitive events.

## II. SWINE PROJECTS AVAILABLE

### Market Pig Project

Members should learn to manage 1 to 20 or more purebred or crossbred barrows and/or gilts. These can be raised, or purchased as feeder pigs. Ownership or a partnership arrangement with a parent or guardian is required. Pigs should be farrowed 5 to 7 months before these animals are shown or sold. A feed and growth record should be kept for at least 3 months on all animals entered in this project. Some carcass information should be provided, if possible. All pigs should be individually identified, either by ear notching or tattooing. Eligible 4-H members may exhibit at the county fair or other shows if they choose. The exhibition animal or animals may be selected from within the group of market pigs.

### Breeding Gilt Project

Members should learn to raise, care for, and keep a feed and growth record on one or more purebred, grade, or crossbred gilts intended to be kept for breeding. A feed and growth record should be kept for at least 3 months. These gilts can be raised at home or purchased before weighing 40 pounds. All gilts should be individually identified with ear notches or tattoo. Gilts also may be raised together with market barrows such as in the Market Pig Project. Eligible members are allowed to exhibit at the county fair, compete for state trips, and other shows. Gilts should be farrowed after January 1 and before May 31.

## GOALS

### BEGINNING MEMBER

Project goals are to:

1. Learn how to select one or more market pigs or breeding gilts.
2. Learn how to feed and care for one or more market pigs or breeding gilts.
3. Learn how to keep accurate health, feed, growth, and cost records.
4. Learn how to prepare and show one or more market pigs or breeding gilts.
5. Give one informal talk or demonstration about your project at a club meeting, project meeting, or club tour.
6. Attend at least one county or area swine demonstration and/or judging activity.

## INTERMEDIATE AND ADVANCED MEMBERS

Select five or more goals each year so all goals are completed over a period of several years.

Project goals are to:

1. Select a group of pigs averaging 40 pounds or less.
2. Learn how to manage and market a group of pigs; keep and analyze production and marketing records.
3. Learn how to balance and formulate rations for the least cost.
4. Learn about the body functions and digestive processes of a pig.
5. Learn about swine health and vaccination programs.
6. Learn about swine housing, waste management, and pollution control.
7. Give a demonstration on some part of your project.
8. Attend county or area swine production meetings.
9. Exhibit your project animal at swine shows.
10. Attend swine shows.
11. Participate in swine judging contests.
12. Make at least one tour of a swine industry facility, such as a swine testing station, feed mill, packing plant, a direct or terminal market, or swine equipment manufacturer.
13. Learn about the pork carcass and its products.
14. Obtain complete carcass data on as many pigs as possible.
15. Become a junior project leader in swine.

### **Sow and Litter Project — Advanced Breeding Gilt Project**

Members should learn to manage at least one gilt or sow through breeding, gestation, farrowing, and lactation. When possible, participants are encouraged to select gilt(s) raised the first year and continue the project through gestation and farrowing the next year.

**Records must be kept on the entire litter.** Keep feed, health, and growth records on all litters until they are marketed as feeder pigs, for slaughter, for breeding, or exhibited at the county show. Obtain slaughter and carcass data on as many of the pigs sold for slaughter as possible.

#### **ALTERNATIVES IN HANDLING THE LITTER(S)**

Gilts from the litter can be used in the breeding gilt project, used in the market pig project, sold as feeder pigs, sold for slaughter or breeding, or kept for future sow and litter projects.

Boars from the litter should be castrated before weaning and used as described in the Market Pig Project, sold for slaughter when they reach market weight, or sold as feeder pigs. Boars from purebred litters could also be sold for breeding (this would necessitate separating them from the rest of the litter at about 4 months of age).

## GOALS

Select five or more goals each year so all objectives are completed over a period of several years.

Project goals are to:

1. Learn how to manage and feed the sow during the breeding, farrowing, and lactation periods.
2. Learn to keep and analyze sow and litter management records.
3. Learn to balance and formulate rations for the least cost.
4. Learn about swine herd health and vaccination programs.
5. Learn to prepare for and help sows farrow.
6. Learn to care for baby pigs.
7. Learn to feed out the litter.
8. Learn to select breeding and replacement stock.
9. Learn about the reproductive process and other body functions of breeding swine.
10. Learn about the principles of swine genetics, selection, and breeding.
11. Learn about swine housing, waste management, and pollution control.
12. Give a demonstration or talk on some part of your project.
13. Attend county or area swine production meetings.
14. Exhibit a representative sample of your project at a swine show.
15. Participate in swine judging contests.
16. Make at least one tour of some swine industry facility, such as a swine testing station, feed mill, packing plant, a direct or terminal market, swine equipment manufacturer, performance-tested boar sale, or purebred breed sale.
17. Become a junior swine project leader.

### **Swine Project — Without A Pig**

This project is for 4-H members who do not have the facilities to keep a pig, but would like to learn about swine production and pork.

#### **POSSIBLE PROJECTS**

Project members can:

1. Learn the history and characteristics of the different swine breeds. Materials on different swine breeds are available from various purebred breed associations. A notebook can be prepared, materials can be displayed at a club meeting, or a demonstration can be presented.
2. Make several visits to one or more swine facilities (farm, research station, etc.) to observe birth and development of the pigs and the management practices employed during various production phases. These visits should begin about February 1. During the visits, members should talk with the managers and learn all they can about feeding and management practices.

Members can take interesting pictures while at the facility or cut pictures from magazines which

show or demonstrate the various things observed during the visits. With these pictures, a booklet can be prepared which describes swine production. Comments should be included under each picture.

3. Take at least one tour of some swine industry facility, such as a swine testing station, feed mill, packing plant (including a direct or terminal market), swine equipment manufacturer, performance-tested boar sale, or purebred breed sale.
4. Record information on at least 15 retail pork products sold in a local grocery store. The information should include where these cuts originated on the carcass, price per pound, and number of servings per pound. Obtain recipes for preparing a minimum of three retail cuts.  
Members can prepare an exhibit of pictures from magazines or photographs of the various cuts of meats and/or prepared pork dishes.  
Members can prepare a 4-H demonstration illustrating the parts of the pork carcass, the value of pork in the diet, the preparation of a pork dish recipe, or other subjects.
5. Visit the local store or have a meat merchandiser present a talk on pork cuts, their location, and preparation.
6. Tour a meat processing or locker plant and observe the cutting and preparation of pork products.

### III. LESSON IDEAS

This section is broken into major subject matter areas according to the experience of the member. It should give you some ideas of important areas the members should learn. Extension folders, bulletins, and fact sheets are available from Bulletin Room, 3 Coffey Hall, 1420 Eckles Avenue, University of Minnesota, St. Paul, MN 55108.

## BREEDING AND PHYSIOLOGY

### BEGINNER BREEDING AND PHYSIOLOGY

**Breeds of Swine:** Help members to become familiar with the major breeds of swine.

**Parts of a Hog:** Help members to identify and be familiar with the various parts of a hog.

**Terms—Talk Like a Hogman:** Help members to know and understand various parts of a hog.

**How to Select Your Pig:** Help members to know how to select healthy pigs of the ideal type.

**Production Goals and Carcass Traits:** Help members to learn reasonable pork production goals (pigs per litter, gain, feed efficiency, etc.).

### INTERMEDIATE BREEDING AND PHYSIOLOGY

**Reproductive Cycle:** Help members to become familiar with the reproductive cycle of sows and gilts.

**Breeding Procedures:** Help members to become familiar with different breeding procedures such as hand mating, pen mating, and artificial insemination.

**Performance Testing:** Help members to become familiar with principles of performance testing and the programs available.

**Backfat Probing:** Help members to learn how to conduct a backfat probe on a live hog.

**Crossbreeding:** Help members to learn the advantages of crossbreeding and the systems that can be used.

**Identification:** Help members to learn how to ear notch and read ear notches of pigs.

### ADVANCED BREEDING AND PHYSIOLOGY

**How Inheritance Works:** Help members to become familiar with the role of genes and how they work.

**Heritability of Economic Important Traits:** Help members to learn the heritability of economically important traits and how some are correlated.

### MATERIALS TO USE:

- Swine manual
- Extension Bulletin 340 Livestock Judging
- An. Sci. FS2 Methods of Pig Identification
- An. Sci. FS14 Nutrition of Breed Sows and Gilts
- An. Sci. FS11 Feeder Pig Grading Standards
- USDA Farmers Bulletin 1263 Breeds of Swine
- Folder 428 Pork Improvement Through Carcass Evaluation
- An. Sci. FS13 Breeding Management of Sows and Gilts
- Slides: 243 Breeds and Types of Hogs  
912 Judging Hogs

### THINGS TO DO:

- Judge hogs.
- Learn hog breeds.
- Keep feed records.
- Visit a swine producer.
- Read swine magazines.
- Attend shows and sales.
- Study heritability traits.
- Establish improvement program.
- Keep breeding and farrowing programs.
- Manage sow — farrow, lactation.
- Manage farrow to finish.

## NUTRITION

### BEGINNER NUTRITION

**Types of Pig Feed:** Help members to learn the different types of commercial feed available and their intended uses.

**Basic Feed Nutrients and Sources:** Help members to identify various feed nutrients and how they usually are supplied.

**Feeding Your Pig:** Help members to learn how to properly feed and care for pigs.

#### INTERMEDIATE NUTRITION

**Types of Rations:** Help members to become familiar with the types of rations needed for swine and the age or weight of the animal fed.

**How Your Pigs Use Feed:** Help members to become familiar with the digestive processes of pigs.

#### ADVANCED NUTRITION

**Energy, Protein, and Water:** Help members to learn about the energy, protein, and water needs of swine and the functions of these nutrients.

**Minerals, Vitamins, and Additives:** Help members to learn about the needs and functions of these nutrients for swine.

**Life Cycle Feeding:** Help members to become familiar with the requirements of nutrients, amount of total feed, etc. for all classes of swine.

**Ration Formulations:** Help members to learn how to formulate rations for all classes of swine.

#### MATERIALS TO USE:

- Swine manual
- Bulletin 370 Feed and Management of Baby Pigs
- An. Sc. FS14 Nutrition of Breed Sows and Gilts
- An. Sc. FS 25 High Lysine Corn for Swine
- Film: Hog Rations

#### THINGS TO DO:

- Visit a feed mill and lab.
- Balance a ration.
- Formulate rations.

### FACILITIES

#### BEGINNER FACILITIES

**Facility Needs:** Help members to become familiar with basic housing needs of pigs.

#### INTERMEDIATE FACILITIES

**Types of Swine Confinement Housing:** Help members to become familiar with types of farrowing, nursery, and finishing units for swine.

**Waste Management:** Help members to become familiar with different systems of waste disposal in confinement-type swine operations.

#### ADVANCED FACILITIES

**Swine Production Systems:** Help members to become familiar with the major systems of swine production.

**Grading and Marketing:** Help members to learn the USDA grades for slaughter swine and feeder pigs and to become familiar with the major methods of marketing hogs.

**Record Keeping:** Help members to learn the importance of keeping accurate useful records in a swine operation.

**Careers in the Swine Industry:** Help members to explore the possibility of employment in the swine industry or related agri-business.

#### MATERIALS TO USE:

- Swine manual
- Plans from Extension Office

#### THINGS TO DO:

- Build a nursery.
- Build a farrowing house.
- Build a manure disposal.
- Learn to use scales.
- Build slotted floors.

### HERD HEALTH

#### BEGINNER HERD HEALTH

**How to Recognize Normal and Abnormal Appearance:** Help members to recognize a sick pig.

**Management Points for Good Health:** Help members to become familiar with swine practices that insure good health of pigs.

**Care of Baby Pigs:** Help members to become familiar with management techniques to use in caring for baby pigs such as iron shots, castration, tail docking, clipping needle teeth, etc.

#### INTERMEDIATE HERD HEALTH

**Some Common Diseases:** Help members to become familiar with the most common swine diseases and how to prevent them.

**Internal and External Parasites:** Help members to become familiar with the most common parasites and to prevent and/or control them.

#### ADVANCED HERD HEALTH

**Life Cycle Herd Health Prevention and Treatment:** Help members to become familiar with sanitation and disease prevention practices for all classes of pigs.

#### MATERIALS TO USE:

- Swine

#### THINGS TO DO:

- Castrate.
- Vaccinate.
- Ear notch pigs.
- Visit a veterinarian.
- Remove needle teeth.
- Establish foot baths.
- Learn care of newborn pigs.
- Control parasites.
- Establish herd health program.

These are only ideas of areas within the project that can be taught. It is very important that you as a leader find out what the members know and help them learn from there. The lessons can be taught or presented in many ways. There are many people who would be willing to help you, if you just ask.

The main thing is to meet with the youth as soon as you know they are taking the project. Develop a time schedule with them as to what needs to be taught and at what time of the year.

Check with other specie areas. Could you work on some of the sessions together?

## LEADER'S TEACHING OUTLINE

### Introducing Animal Nutrition

#### TEACHING OBJECTIVES

Help members to:

- a. Understand animal nutrition is a science.
- b. Know the anatomy of the digestive tract of beef, sheep, and swine.
- c. Understand the essential function of the different major organs of the digestive system.
- d. Understand some reasons why cattle and sheep nutrition are different from swine nutrition.
- e. Know nutrition terms.
- f. Learn more about the principles involved in feeding.

#### WHAT IS TO BE PRESENTED

- a. Learn the definition of terms related to nutrition.
- b. Study the digestive tract and learn functions of the various parts of the tract for the swine, sheep and cattle. Learn the difference between the two types.
- c. Learn why knowledge of the digestive system is important for the producer to know as he plans his feeding programs.

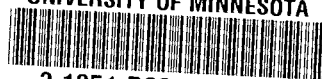
#### HOW WILL IT BE PRESENTED

- a. Have the members study the digestive system of animals in their manuals. Give them some questions to answer relating to the material in the manual.
- b. Use the slide set "Roaming Through the Rumen" and discuss this. If possible, get some digestive tracts of swine, cattle, chickens, or rabbits from a local farmer in the area.
- c. Discuss parts of the digestive system and how each functions.

#### EVALUATION

- a. Have drawing made of the digestive system of swine and cattle and ask youth to label the parts and to give their functions.
- b. Give a simple quiz on the meanings of appropriate terms.

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