

Course: Principles of Agriculture, Food and Natural Resources

Unit Title: Breeds of Swine

TEKS: 130.2(C)(12)(C)

Instructor: Ms. Hutchinson

Objectives:

After completing this unit of instruction, students will be able to:

- A. Research breeds of swine;
- B. Define swine terminology;
- C. Write why the production of swine has increased;
- D. Identify some aspects of an "ideal" hog;
- E. Define what a market hog is raised for;
- F. Define what a breeding hog is raised for;
- G. List the characteristics of a maternal breed;
- H. List the characteristics of a terminal breed;
- I. Identify characteristics of the major swine breeds;
- J. Describe uses of the major swine breeds; and
- K. Match characteristics with breed name.

Interest Approach:

A. Research Breeds of Swine;

- Prior to teaching this lesson, have students research Swine Breed Registries to obtain information on breeds of hogs. In groups of 2-3 have each group research a different breed; as class takes notes on each breed, each group will present information obtained from breed registry.

Curriculum & Instruction:

<i>Curriculum</i>	<i>Instruction</i>
<p data-bbox="237 701 609 732">B. Define swine terminology;</p> <p data-bbox="188 737 349 766">Terminology:</p> <ul data-bbox="237 772 1019 1016" style="list-style-type: none">- Sow – Mature female pig (has already farrowed a litter of piglets)- Gilt – Young female pig (has not farrowed a litter)- Boar – Male pig- Barrow – Male pig castrated at a young age- Feeder Pig – Newly weaned pig weighing approximately 40lbs- Prolific – being able to produce large numbers of offspring <p data-bbox="188 1058 310 1087">Numbers:</p> <p data-bbox="188 1094 289 1123">In 2010:</p> <ol data-bbox="237 1129 894 1262" style="list-style-type: none">1. World – 965,885,381 head2. China – 476,237,000 head3. European Union (25 countries) – 152,562,132 head4. United States – 64,887,000 head <p data-bbox="188 1270 289 1299">In 2011:</p> <ul data-bbox="237 1306 824 1440" style="list-style-type: none">- Iowa was number one in the US w/ 19 million- #2: North Carolina 8 million- #3: Minnesota 7 million- Texas was #14 w/ 810,000 head <p data-bbox="237 1482 889 1514">C. Write why the production of swine has increased;</p> <p data-bbox="188 1520 479 1549">Per Capita Consumption</p> <ul data-bbox="237 1556 935 1730" style="list-style-type: none">- Define – Per Capita means per person- In 2010 – 48.0 lbs- Fairly constant, but human population has increased- Causing swine production to increase due to improved breeding, feeding, and management programs	<p data-bbox="1052 701 1247 741">PPT Slide 4</p> <p data-bbox="1052 1075 1247 1115">PPT Slide 5</p> <p data-bbox="1052 1125 1414 1188">Which state is number one in the U.S. for swine production?</p> <p data-bbox="1052 1232 1370 1295">Where does Texas stand in swine production?</p> <p data-bbox="1052 1520 1247 1560">PPT Slide 6</p> <p data-bbox="1052 1570 1370 1633">Why has the production of swine increased?</p>

D. Identify some aspects of an “ideal” hog;

Ideal Hog:

- Structurally sound
- Healthy
- Thick muscled
- Highly efficient
- Large body capacity

E. Define what a market hog is raised for;

F. Define what a breeding hog is raised for;

Market vs. Breeding Hogs

- Market – raised for harvesting
- Breeding – raised for replacements

G. List the characteristics of a maternal breed;

H. List the characteristics of a terminal breed;

Two Categories

- Maternal
 - Known for large litters
 - Selected for replacement females
- Terminal
 - Known for growth & carcass quality
 - Usually used for terminal crosses

PPT Slide 7

What are the 5 main things we look for in the “ideal” hog?

PPT Slide 8

What are market hogs raised for?

What are breeding hogs raised for?

PPT Slide 9

What are the characteristics of a maternal hog?

What are the characteristics of a terminal hog?

Maternal breeds

- Chester White
- Landrace
- Yorkshire

- I. Identify characteristics of the major swine breeds;
- J. Describe uses of the major swine breeds;

Chester White:



- Developed in Chester & Delaware Counties in Pennsylvania
- Parent stock from Cheshire, Lincolnshire, & Yorkshire (English origin)
- Large & White
- Droopy ears
- Small bluish spots or freckles are sometimes present on skin
 - Selected against though
- Sows are noted for mothering ability
 - Large litters that grow out rapidly

Landrace:



- Descendants of Danish Landrace that had its origin in 1895
- For many years, Denmark refused to export purebred Landrace breed stock because the Landrace was used mainly for bacon exporting for the country of Denmark.
- 1st imported to U.S. in 1934 for experimental purposes only
- In 1949 Denmark released the restrictions on the breeding of the Landrace for purebred breeding stock
- White hair & skin
- Long, deep side

PPT Slide 10

PPT Slide 11-12

What are the physical characteristics of a Chester White?

What are is a Chester White sow noted for?

PPT Slide 13-15

What was the Landrace breed originally imported to the U.S. for?

What are the physical characteristics of the Landrace?

What is considered grounds for refusal into the breed association for a Landrace?

What are the Landrace noted for?

- Flat black
- Small black spots on skin are common
- Any black hair on the animal can be grounds for refusal of registration by breed association
- Straight snout & trim jowl
- Very large, slightly drooping ears
- Known for their length of body
- Sows are prolific, farrow large litters, & have good mothering ability
- Medium size
- Noted for its efficient feed utilization & meaty carcass

Yorkshire:



- AKA: Large White Breed
- Developed in England in the County of York
- Imported to U.S. in 1830 from England to Ohio
- At first, Yorkshire failed to gain popularity due to:
 - Slow growth rate
 - Short nose
- Improved with selection & importation to a more durable & productive breed
- Today, one of the more recorded breeds of swine in the U.S.
- White w/ occasional black freckles
- Erect ears
- Dished face
- Extremely long & deep sided
- High carcass quality
- Very prolific
- "Mother Breed"
 - Excellent mothering ability
- Large breed, used widely in crossbreeding programs

PPT Slide 16-18

Why did the early Yorkshires now gain popularity?

What are the physical characteristics of a Yorkshire?

What breed is considered the "Mother Breed"?

Why is the Yorkshire considered the "Mother Breed"?

What are Yorkshires widely used in?

Terminal breeds

- Berkshire
- Duroc
- Hampshire
- Poland China
- Spotted Poland China
- Pietrain
-

Berkshire:



- Origin: Berkshire County, England
- Brought to U.S. in 1823
- One of the oldest improved breeds
- Black w/ 6 white points
 - 4 feet
 - Some on face
 - White switch on tail
 - **Any or all of the points may be missing**
- More than 10% of white on body will disqualify it!
- Most distinctive characteristic is the head!
 - Short snout & turned up
 - Erect Ears
- Produces a high quality carcass

Duroc:



- First called "Duroc-Jersey"
- Origin:
 - Jersey Reds of New Jersey
 - Red Durocs of New York
 - Red Berkshires of Connecticut

PPT Slide 19

PPT Slides 20-22

Describe the physical characteristics of a Berkshire.

How much white is allowed on a Berkshire?

What characteristics of the Berkshire's head are so distinct?

PPT Slides 23-25

When were the breed standards first developed for the Duroc?

What color and ear type does a Duroc have?

What are Durocs known for? (Maternal and Terminal traits)

- Breed standards developed in 1885
- Color: Medium Cherry Red
 - Can vary from a golden yellow to a dark red
- Droopy ears
- Sows are prolific w/ good mothering ability
- Excellent feeding capacity
- Produce large amounts of milk
- Very desirable carcass
- Large breed
- Outstanding muscle quality
- Fast growers

Hampshire:



- Origin: Southern Scotland & Northern England
- Was known as “Old English Breed”
- Admired for:
 - Proficiency
 - Hardy vigor
 - Foraging ability
 - Carcass quality
- Used extensively in crossbreeding because of good carcass quality
- Smaller than some breeds
- Black w/ white band around body at the shoulder including front legs and feet
- Head, tail, & back legs are black
- Erect ears
- Face is longer & straighter compared to other breeds
- Sows are:
 - Very prolific
 - Have extra longevity
 - Good mothers

PPT Slides 26-28

What is the Hampshire admired for?

Why are Hampshires used extensively in crossbreeding programs?

What does a Hampshire look like?

Describe a Hampshire sow.

Poland China:



- Developed between 1800 & 1850
- Black w/ 6 white points
 - Blazed white face, feet, and tip of tail
 - Absence of 1 or all white points does not disqualify the animal from registration
- High percentage of white markings are acceptable, although discouraged
- Good length
- Thick hams
- Produces highly desirable carcass
- Large breed
- Drooping ears
- Trim head

Spotted Poland China (Spot):



- Developed of the "Spot" is the same as the Poland China (differ only in color)
- National Spotted Poland China Association in 1914, changed to Spotted Swine Record in 1960
- 50% black, 50% white
- Eligible for registration: between 20%-80% of the body must be white
- Drooping ears
- Large breed known for producing fast growing & feed efficient offspring

PPT Slides 29-30

Describe what a Poland China looks like.

PPT Slide 31-32

What is a Spotted Poland China usually called?

How much black and white does a Spot have?

What type of ears does a Spot have?

What is the Spot breed known for?

Pietrain:



- Birthplace: Pietrain, Belgium
- Exact origin is unknown
- Early Pietrain:
 - Smaller-framed
 - Low daily gains
 - Stress gene
- German Pietrain:
 - Larger frame
 - Offer maximum muscle
 - High quality meat
 - Stress free
- **Combination of the two has given the breed a reputation for improving the quality of market swine**
- Most producers use this breed to cross with other purebreds to get hybrids with very desirable carcass traits
- Color varies
 - Some are black w/ white markings (due to Belgium Pietrain had Berkshire influence)
 - Some are lighter or white in color w/ black markings (due to Landrace influence)
 - **Any reddish tint is unacceptable**
- Erect ears
- Medium size
- Short legs
- Heavy muscling
- High proportion of lean to fat
- Sows are prolific, but lack mothering capability & milking production

PPT Slide 33-36

Describe the early Pietrain.

Describe the German Pietrain.

Why do producers use this breed to cross with other purebreds?

What color variety can a Pietrain be?

Describe the physical characteristics of a Pietrain.

What does a Pietrain sow lack in?

In groups of 2-3 discuss and brainstorm on large post-it what you learned about a breed of hog. Groups will be assigned a different breed of hog than what they researched about. Groups will then present in front of the class what they have learned. Each person in the group will use their own color marker on the post-it so each student can be graded individually.

K. Match characteristics with breed name.

Class will be divided in groups of 4. Each group will be given a set of characteristics of a breed of hog. They are to determine what breed of hog their characteristics belong to. Once they have figured out which breed their characteristics belong to, the group will tape them under the correct breed located on the wall. We will discuss each breed and make sure that each group got their breed correctly.

Individually students will complete a matching worksheet with pictures and descriptions of breeds of hogs.

Students will be given large post-it notes & markers.

There will be labels of the breeds on the walls around the classroom.

Matching Worksheet

Review & Evaluation:

Objectives will be reviewed before examinations. Exams will be developed based on objectives *as taught in class*.

Instructional Support:

- A. References
 - a. IMS online curriculum
 - b. www.faostat.fao.org
 - c. www.nass.usda.gov
- B. Teaching Aids & Equipment
 - a. Projector
 - b. PowerPoint
 - c. Different colored Markers
 - d. Matching worksheet
 - e. Breed labels
 - f. Breed characteristic labels
 - g. Large post-it notes
- C. Facilities
 - a. Agriculture building classroom