

## BREEDS OF SWINE

Swine production is a highly scientific and specialized business in American agriculture. According to the Foreign Agricultural Statistics Web site, the total world hog numbers in 1999 were 762 million head. China ranks highest in the production of hogs, which amount to 422.5 million head. The European Community, which consist of France, Spain, Italy, West Germany, Belgium, Netherlands, Luxembourg, Denmark, Ireland, United Kingdom, Greece, and Portugal, ranks second in hog production with 122.8 million head. The U.S. ranks third with 62.2 million head. In the U.S., Iowa ranks first in hog production, while Texas ranks fifteenth. Hogs rank second only to cattle in total livestock production in the U.S. The per capita consumption of pork has remained fairly constant, but the human population has greatly increased. The increase in human population has caused swine production to increase through improved breeding, feeding, and management programs. Hog producers must select hogs to meet the needs of the current swine market.

The swine population is large and consists of several breeds. Personal preference and/or individual merit of the hog are the basis for the selection of a breed. No one breed is perfect in every respect. Breeds of swine are commonly chosen by producers to meet the conditions under which the hogs are to be raised. The producers need to establish why they are raising hogs; for breeding stock or to sell at the market.

Individual merits of the animal are the key to establishing and maintaining a profitable herd, particularly if the objective is to produce and sell breeding stock. Today, a structurally sound, healthy, thick muscled, highly efficient hog with a large body capacity is considered the “ideal” hog. Highly controlled selection and breeding programs within breeds and specialized crossbreeding programs have put the swine industry near the top in production among the various livestock enterprises.

The breeds of swine discussed in this topic are chosen according to their popularity among the U.S. market and breeding operations. There are several breeds not mentioned because their influences on market operations are not as significant. A market hog\* operation raises hogs for slaughter, while a breeding operation raises hogs for replacements.

Breeds of swine can be grouped into two different catagories, “Maternal” or “Terminal” breeds. The maternal breeds are known for their large litters and are selected for replacement females. Terminal sire breeds are recognized for their growth and carcass quality and are usually used for terminal crosses. The breeds of swine to be discussed in this topic are listed below.

### Maternal Breeds

Chester White  
Landrace  
Yorkshire

### Terminal Sire Breeds

Berkshire	Duroc
Hampshire	Poland China
Spot	Pietrain

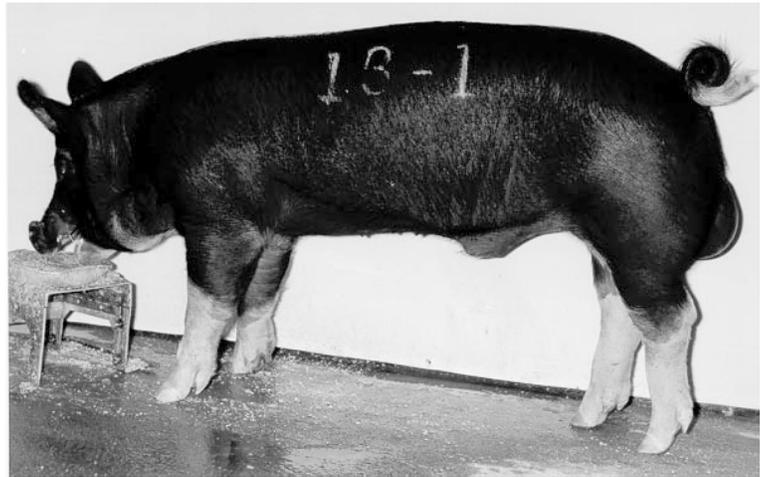
\*Underlined words are defined in the Glossary of Terms.

As you study these breeds, it will be interesting to note that with the exception of the Berkshire, Landrace, Pietrain, and Yorkshire, the breeds of swine common to the U.S. are strictly American creations. They may have origins from other countries, but the development of these breeds was done in the United States.

## **BERKSHIRE**

The Berkshire is one of the oldest of the improved breeds of swine. Its origin was in Berkshire County, England. The first Berkshires were brought to the U.S. in 1823. Berkshire hogs are black and generally have six white points. The points are composed of four white feet, some white on the face, and a white switch on the tail. Any or all white points may be missing. An animal of this breed with more than 10% of the body in white markings is disqualified for registration.

The most distinctive characteristic of the Berkshire is its head. The snout is short and turned up, and the ears are erect. In conformation and fleshing, the Berkshire generally conforms to the ideal “meat-type” hog and produces a high-grade carcass. A mature Berkshire hog is of medium size.

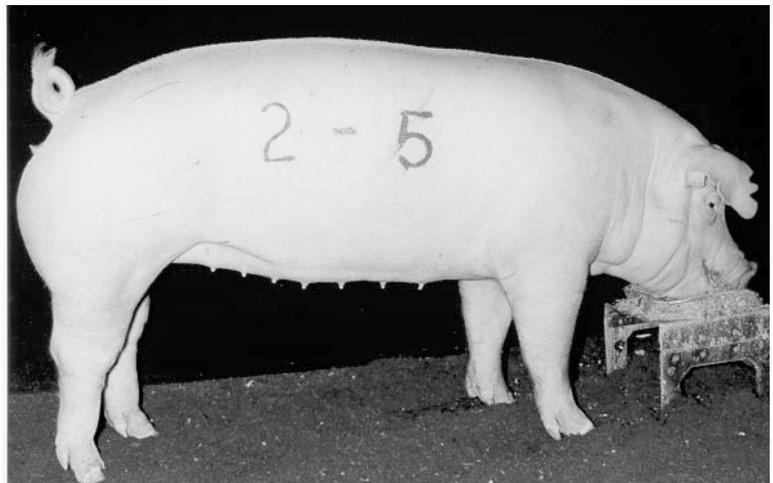


*Figure 1. Berkshire*

## **CHESTER WHITE**

The Chester White breed was developed in Chester and Delaware Counties in Pennsylvania from parent stock of Cheshire, Lincolnshire, and Yorkshire breeding, all of which were of English origin.

The Chester White is characterized by being large in size and white in color. Small bluish spots or freckles are sometimes present on the skin, but are selected against. Sows of this breed are noted for their mothering ability because they produce large litters of pigs that grow out rapidly.



*Figure 2. Chester White*

## DUROC

This breed was first called the Duroc-Jersey, having its origin from the Jersey Reds of New Jersey, the Red Durocs of New York, and the Red Berkshires of Connecticut. Standards were developed for the breed in 1885. The preferred color for Durocs is a medium cherry red, but shades vary from a golden yellow to a dark red. Another distinguishing characteristic of the Duroc is drooping ears. Duroc sows are prolific and have a good mothering ability. They have excellent feeding capacity and produce large quantities of milk.



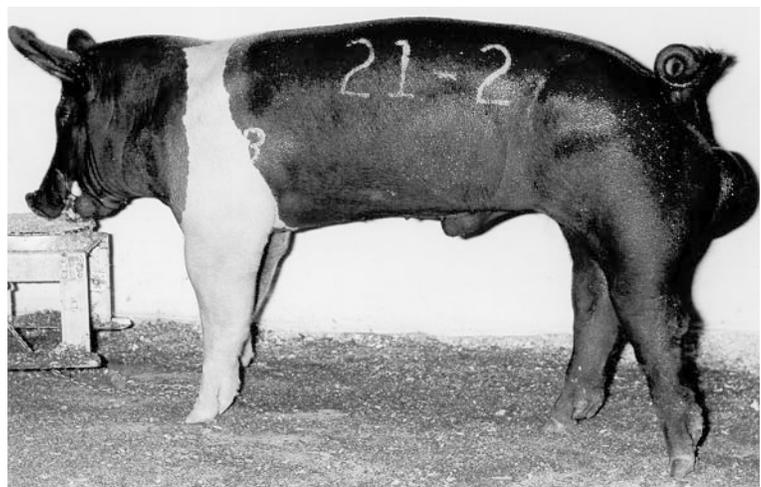
*Figure 3. Duroc*

In type and conformation, Durocs produce a very desirable carcass. In size, Durocs are considered a large breed. Durocs have been identified as a superior genetics source for improving quality. Their muscle quality and their ability to grow fast have made them an outstanding terminal sire. The Duroc breed of swine is one of the most popular in the United States because of distinguished accomplishments in longevity and prolificness in the female line and lean gain efficiency, carcass yield, and product quality in the terminal sire.

## HAMPSHIRE

The Hampshire hog originated in southern Scotland and Northern England. They were known as the “Old English Breed” and were admired for their proficiency, hardy vigor, foraging ability, and outstanding carcass quality. Hampshires were developed in Boone County, Kentucky, from foundation stock raised in the New England states known as the Thin Rinds and Belted Hogs.

The Hampshire is a black hog with a white band around the body at the shoulder including the front legs and feet. The head, tail, and back legs are black. Their ears are erect and their face is longer and straighter than other breeds. Hampshire sows are very prolific, have extra longevity, and make good mothers. They have been used extensively in crossbreeding because of their good carcass quality. The modern Hampshire is the leader in producing carcasses of high quality. In size, the Hampshire is smaller than some breeds.

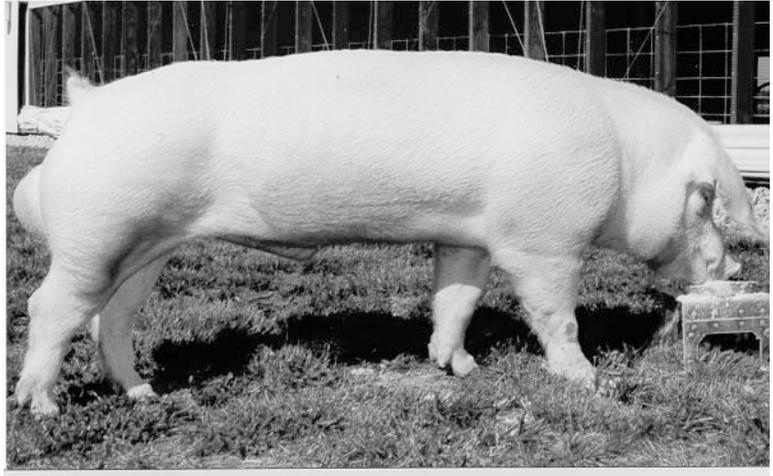


*Figure 4. Hampshire*

## LANDRACE

The American Landrace came from descendants of the Danish Landrace that had its origin in 1895. For many years Denmark refused to export purebred Landrace breeding stock because the Landrace was used mainly for bacon exporting from the country of Denmark.

The Landrace breed was first imported to the U.S. for experimental purposes only in 1934 from Denmark. In 1949, the Ministry of Foreign Affairs of Denmark released its restriction on the production of Landrace for purebred breeding stock. Following the removal of restrictions on the Denmark Landrace, other importations of Norwegian and Swedish breeding stock were crossed leading to the developments used today.



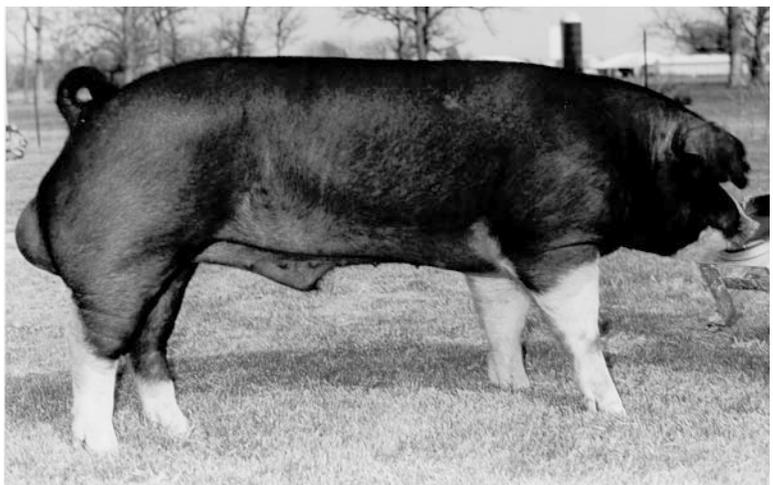
*Figure 5. Landrace*

The Landrace has white hair and skin, although small black spots on the skin are common. Any black hair on the animal can be grounds for refusal of registration by the breed association. Distinguishing characteristics include a long, deep side, a flatter back, a straight snout and trim jowl, and very large, slightly drooping ears. Landrace breeds are promoted for their ability to cross with other breeds and are known for their length of body. Landrace sows are prolific, farrow (give birth to) large litters, and possess good mothering ability. The breed is medium in size and is noted for its efficient feed utilization and meaty carcass.

## POLAND CHINA

The Poland China was developed between 1800 and 1850 in the Miami Valley region of Warren and Butler Counties in Ohio. Parent stock used in developing the breed were the White Byfield Hog from Russia, the Big China Hog from Pennsylvania, the Irish Grazer from Ireland, the Berkshire, and native hogs.

In color, the Poland China is black with six white points. These points include a blazed white face, white feet, and a white tip on the tail. Absence of one or all of the white points does not disqualify the animal for registration.



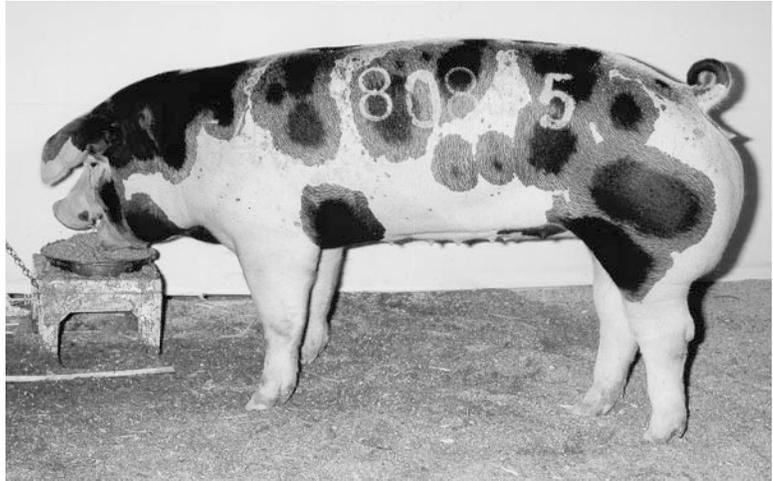
*Figure 6. Poland China*

A high percentage of white markings on the animal are acceptable, although discouraged. Poland Chinas are a large breed. The typical Poland China has good length and thick hams, and they produce highly desirable carcasses. Drooping ears and a trim head are characteristic of these hogs.

### **SPOT**

The development of the “Spot” was the same as the Poland China, since they differ only in color. The National Spotted Poland China Record Association was organized in 1914, but the name was changed to the National Spotted Swine Record in 1960. The desired color of the Spotted hog is 50% black and 50% white. However, to be eligible for registration, between 20% and 80% of the body must be white.

This breed resembles the Poland China in conformation and type. Head characteristics of the breed include drooping ears. Spots are a large breed known for producing fast growing and feed efficient offspring.

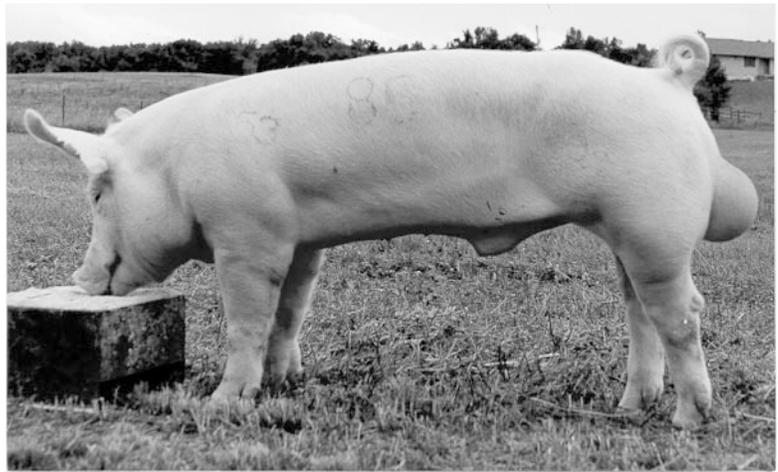


*Figure 7. Spot*

### **YORKSHIRE**

The Yorkshire, known as the Large White breed, was developed in England in the County of York. The Yorkshire was imported to the U.S. around 1830 from England to Ohio. They failed to gain popularity with the farmers at first due to their slow growth rate and short noses. With selection and importing, the Yorkshire improved to a more durable and productive breed. Today they are one of the most recorded breeds of swine in the United States.

The Yorkshire is white in color with occasional black freckles on the skin. They are extremely long, deep-sided hogs with high carcass quality and are known to be very prolific.



*Figure 8. Yorkshire*

The Yorkshire breed is known to have excellent mothering ability and is often referred to as the “Mother Breed.” Distinguishing characteristics of the head include a slightly dished face and erect ears. The Yorkshire is a large breed and has been used widely in crossbreeding programs.

## PIETRAIN

This breed's birthplace is Pietrain, Belgium from which it takes its name, although, their exact origin is unknown. The early Belgian Pietrain's were smaller-framed with low daily gains and had a genetic stress factor. This brought out the beginning of the German Pietrain, which had a larger frame and offered maximum muscle.

The German Pietrain produces high-quality meat for market and is stress free. The combination of these strains of Pietrains has given the breed a reputation for improving the quality of market swine. Most producers use this breed to cross with other pure breeds to get hybrids with very desirable carcass traits.



*Figure 9. Pietrain*

The color marking of the Pietrain varies. Some Pietrains are black with white markings because the Belgian Pietrain had Berkshire influence. Some are lighter or white in color with black markings due to the Landrace influence. Any reddish tint is unacceptable in the Pietrain. The Pietrain has erect ears and is medium in size. Distinguishing characteristics of the Pietrain include shorter legs, heavy muscling, and a high proportion of lean fat. Pietrain sows are prolific but lack mothering capability and milking production.

### BREED REGISTRY ADDRESSES

American Yorkshire Club  
Member of the National Swine Registry  
P.O. Box 2417  
West Lafayette, IN 47996-2417  
[www.nationalswine.com](http://www.nationalswine.com)

United Duroc Swine Registry  
Member of the National Swine Registry  
P.O. Box 2417  
West Lafayette, IN 47996-2417  
[www.nationalswine.com](http://www.nationalswine.com)

Hampshire Swine Registry  
Member of the National Swine Registry  
P.O. Box 2417  
West Lafayette, IN 47996-2417  
[www.nationalswine.com](http://www.nationalswine.com)

American Landrace Association  
Member of the National Swine Registry  
P.O. Box 2417  
West Lafayette, IN 47996-2412  
[www.nationalswine.com](http://www.nationalswine.com)

National Spotted Swine Registry  
Member of Certified Pedigreed Swine  
P.O. Box 9758  
Peoria, IL 61612

Poland China Record Association  
Member of Certified Pedigreed Swine  
P.O. Box 9758  
Peoria, IL 61612

Chester White Swine Record  
Member of Certified Pedigreed Swine  
P.O. Box 9758  
Peoria, IL 61612

American Berkshire Association  
P. O. Box 2436  
West Lafayette, IN 47906

### *Acknowledgements*

*Shannon Houy, Graduate Assistant, Department of Agricultural Education, Texas A&M University, researched and developed this topic.*

*Steven R. Mapes, Milford Center, Ohio, provided the photographs for this topic.*

*Kirk Edney, Curriculum Specialist, Instructional Materials Service, Texas A&M University, reviewed this topic.*

*Vickie Marriott, Office Software Associate, Instructional Materials Service, Texas A&M University, edited and prepared the layout and design for this topic.*

## REFERENCES

- Ensminger, M. E. *Animal Science*. 9th ed. Danville, IL: The Interstate Printers and Publishers, 1991.
- Foreign Agricultural Service. (1999). *Hogs/Pork Commodity*. [Online]. Available: [www.fas.usda.gov/commodity.html](http://www.fas.usda.gov/commodity.html) [2000, September 13].
- National Pork Producers Council. (1998). *Breed Associations*. [Online]. Available: [www.nppc.org/breedsassns.html](http://www.nppc.org/breedsassns.html) [2000, September 20].
- Oklahoma State University Department of Animal Science. (1999). *Breeds of Swine*. [Online]. Available: [www.ansi.okstate.edu](http://www.ansi.okstate.edu) [2000, September 13].

## GLOSSARY OF TERMS

Longevity - The productive life of an animal.

Market hog - A type of hog that is raised for slaughter.

Meat-type hog - A well-muscled hog that has good length of body and an above average percentage of ham, loin, and shoulder.

Mothering ability - Characteristic of certain breeds of hogs that produce large litters and demonstrate excellent milking and care for the young pigs.

Prolific - Productive; abundant reproduction; a prolific sow will farrow large litters of pigs at reasonable intervals.

## SELECTED STUDENT ACTIVITIES

**TRUE/FALSE:** Circle the “T” if the statement is true or the “F” if it is False.

- |   |   |    |   |
|---|---|----|---|
| T | F | 1. | The United States is the number one hog producing country.                                |
| T | F | 2. | The Berkshire is known as the “meat-type” breed, producing a high-grade carcass.          |
| T | F | 3. | The Landrace is often referred to as the “mother breed” because of its mothering ability. |
| T | F | 4. | Some reddish tint is acceptable in the Pietrain breed for registry.                       |
| T | F | 5. | The Hampshire is known as the leader in producing high quality carcasses.                 |

**MATCHING:** Write the letter of the term in the right column to its description in the left column.

- |       |    |                              |    |            |
|-------|----|------------------------------|----|------------|
| _____ | 6. | Abundant reproduction        | a. | heterosis  |
| _____ | 7. | Hog raised for slaughter     | b. | prolific   |
| _____ | 8. | Also known as hybrid vigor   | c. | longevity  |
| _____ | 9. | Productive life of an animal | d. | market hog |

**SHORT ANSWER/LISTING:** Answer the following questions in the space provided or on additional paper if necessary.

10. Which four breeds of swine discussed in this topic were not American creations?

- |    |       |    |       |
|----|-------|----|-------|
| a. | _____ | c. | _____ |
| b. | _____ | d. | _____ |

11. List the names of the purebred breeds of hogs that are found in your locality.

\_\_\_\_\_

12. What advantage is generally gained in the development of the new Inbred lines of hogs?

\_\_\_\_\_

13. Write the name of the breed of swine in the space that is provided for each description.

- \_\_\_\_\_ A breed medium in size imported from Denmark, long bodied, with white hair and skin, occasional freckles, and very large, slightly drooping ears.
- \_\_\_\_\_ A large white breed imported from England and characterized by erect ears and a slightly dished face.
- \_\_\_\_\_ A large red breed with drooping ears, recognized for its mothering ability and carcass conformation.
- \_\_\_\_\_ A large breed identified by being black in color and having 20 to 80 percent white markings and drooping ears.
- \_\_\_\_\_ A breed that is black in color with a white band around the body at the shoulders and has erect ears.
- \_\_\_\_\_ A breed that its birthplace is from Belgium and has a reputation for improving the quality of market swine.
- \_\_\_\_\_ A large breed that is black in color with six white points and was developed in Ohio.
- \_\_\_\_\_ A breed that is black in color with six white points and was developed in England. One of the oldest improved breeds.
- \_\_\_\_\_ A breed medium in size, white in color and drooping ears with good mothering ability, and was developed in Pennsylvania.

### **ADVANCED ACTIVITIES**

1. Select two breeds of swine and compare them based on their impact on the market today versus when the breed was first developed. Write the breed registry association for additional information, such as the carcass characteristics and reproductive traits. Report your research findings to the class.
2. Using the Internet, find the average per capita consumption per individual of pork in the U.S. and compare it to the consumption of another meat. (A helpful Web site is: [www.fas.usda.gov/](http://www.fas.usda.gov/))

### **ALL RIGHTS RESERVED**

Reproduction prohibited without written permission.  
Instructional Materials Service  
Texas A&M University  
2588 TAMUS  
College Station, Texas 77843-2588  
<http://www-ims.tamu.edu>

**2001**