

Success in the swine industry depends partly on a broad knowledge of the breeds of hogs used in production. Knowing the different breeds and their characteristics is important in making decisions about which breed to use in breeding programs. Producers also need to consider whether to use hybrid hogs in their operation.

Breeds of Swine

The major breeds of swine include the Berkshire, Chester White, Duroc, Hampshire, Landrace, Pietrain, Poland, Spotted, and Yorkshire. Differences between these breeds are apparent in ear type and color variation.

Berkshire - Berkshires are black with six white points - the tip of the tail, nose, and four feet - and have erect ears. Berkshires produce high-quality meat with excellent marbling and optimum color. The breed has recently lost much of its popularity in the United States because it has not kept up with the trend toward lean, heavily muscled, large-framed hogs. They were first imported from England in the early 1800s.

Chester White - Chester Whites are white with small, drooping ears. They were once very popular across the United States because of their durability and ruggedness. Chester Whites have good mothering ability. This breed was developed in Pennsylvania in the early 1800s.

Duroc - Durocs are solid red in color and have drooping ears. They are among the fastest-growing hogs available to producers. Durocs are primarily used to produce fast-growing market hogs. They were developed in the United States during the mid-1800s by crossing red hogs from New York and New Jersey.

Hampshire - Hampshires are black with a white belt around the front of the body including the front legs, and they have erect ears. Hampshires are used to produce lean, heavily muscled offspring. They originated in England and were first imported during the early 1800s.

Landrace - Landrace hogs are white with large, droopy ears that cover the entire face. They are extremely long-bodied and are used primarily as a maternal breed because of their mothering ability. Landrace hogs originated in Denmark and was imported during the 1930s.

Pietrain - Pietrains are generally spotted with erect ears. They are the leanest and most heavily muscled hogs in the world. Pietrains often carry a stress gene linked to meat quality problems; the gene causes light-colored, watery pork. They are typically crossed with other breeds to produce terminal sires (boars used to produce market hogs of which none are kept as replacement breeding stock). Pietrains were imported from Germany and Poland.

Poland China - Poland Chinas are black with six white points and have drooping ears. They have been used in programs to increase growth rates. The popularity of the breed has decreased recently across the country because it has not kept up with the trend toward leanness. Poland Chinas were developed in Ohio during the first half of the 19th century.

Spotted - Spotted hogs were named for their color; they have black and white spots all over their bodies. They also have drooping ears. They have been used primarily because of their rapid growth. In the U.S. swine industry, spotted hog numbers are small in comparison to the numbers of animals of other breeds. Spotted hogs originated in Indiana from the Poland China breed, and a purebred association was formed in 1914.

Yorkshire - Yorkshires are solid white with erect ears. They are quite versatile in their uses throughout the swine industry. They have excellent mothering abilities but can also be used to produce lean, heavily muscled, fast-growing market hogs. Yorkshires are also called Large Whites and were imported from England in the early 1800s.

Breed Selection

Most American swine producers typically use several breeds together in a crossbreeding program to produce fast-growing, lean, and muscular market hogs. Factors that should be considered are breeds used in the past, litter sizes, leanness, muscle, current growth rates, and efficiency in the conversion of feed to pork. Most producers will evaluate their situation and try to select breeds and individual animals that will help them correct their deficiencies. For example, if a producer is concerned with the mothering ability of the sow herd, he or she might consider using Landrace or Yorkshire hogs

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to improve maternal abilities. Other producers may need to increase the amount of saleable meat on their market hogs and may select Hampshires or Pietrains. The most important part of breed selection is finding breeds and individual animals that meet the needs of the producer.

Hybrid Hogs

Over the past 20 years, producers have started to use hybrid hogs instead of purebred animals. They believe that they can more closely select for specific traits, such as growth or number of pigs born alive. Hybrid hogs have been developed by crossing multiple breeds together and selecting for desired traits. Companies and seed stock producers offer hybrid hogs varying in use from a maternal to a terminal emphasis. The hogs typically are identified by using a number or code to describe the particular strain.

Breeding Systems

Two types of breeding systems are used in the swine industry. Straightbreeding involves mating two animals of the same breed, while crossbreeding is mating animals of different breeds. In the commercial swine industry, most of the producers use some form of a crossbreeding system.

Inbreeding is one form of straightbreeding. Inbreeding is an attempt to concentrate desired traits in offspring. It involves mating two related animals. Closebreeding and linebreeding are two types of inbreeding. In closebreeding, the animals are closely related; an example is mating a brother and sister. Linebreeding involves mating animals that are slightly or distantly related, with only one shared ancestor. Inbreeding can be negative because of the risk of concentrating undesirable and even detrimental traits along with the desirable traits.

Outcrossing is a form of straightbreeding in which unrelated animals of the same breed are mated. Outcrossing is the most popular and safest type of straightbreeding, since it avoids the risks associated with inbreeding.

Crossbreeding, or mating animals of two different breeds, results in a hybrid offspring. Crossbreeding animals with desired traits is an attempt by the producer to maximize heterosis, or hybrid vigor. Heterosis results in improved

performance, growth, and/or carcass traits. It is evident when the animal displays superior qualities in comparison to the average of its parents' traits.

Summary

Several breeds can be used in the production of swine. Producers should select breeds that work well in their production system. When breeding animals, swine producers use purebred and hybrid genetics to produce profitable offspring. Most commercial swine producers use some form of crossbreeding program.

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