

Herd management is a critical component of success in the swine industry. Management includes nutrition, reproduction, pig processing, and measuring production efficiency.

Nutrition

Swine are monogastric animals with a simple stomach that has one compartment. Because of the structure of the stomach, swine cannot digest much roughage. Swine diets contain large amounts of grain, usually corn.

Proper nutrition is an essential part of maintaining herd health. Animals that are suffering from nutrient deficiencies are more susceptible to disease-causing organisms and do not achieve maximum performance. Swine require proper levels of energy (from carbohydrates and fats), protein, vitamins, minerals, and water in their diet. Producers should have nutrient analysis done on samples of the grain they have produced to learn the exact nutrient composition of the grain. Using this information, the producer can design a feed ration that will meet the nutritional requirements of the animal.

Feeding Phases

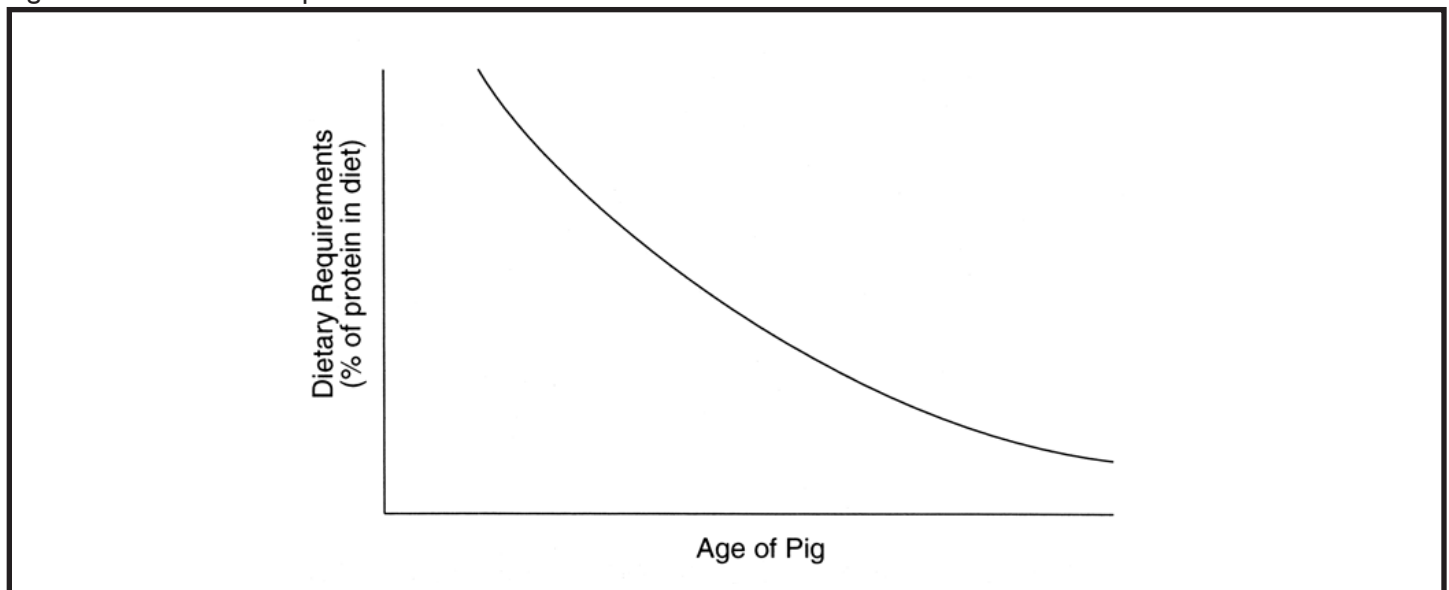
Swine production can be divided into various phases: gestation, lactation, weaning, and growing and finishing. Pigs have various nutritional needs throughout the different phases.

Gestation diets are generally lower in protein than any other swine diet. Gestating sows and gilts are usually fed four to six pounds of feed per head per day depending on the body condition of the animal and environmental conditions. Extra fiber is usually added to the diet shortly before farrowing to act as a laxative and reduce constipation. A good supply of fresh water should be available at farrowing time.

To meet the energy needs of the female, lactation diets are higher in protein and energy than gestation diets. The amount fed to the sows is gradually increased to full feed within five to seven days after farrowing. Generally, producers will feed lactating sows between 12 and 20 pounds per head per day depending on body weight and litter size. Lactating sows also require larger amounts of water than other pigs.

Weaning diets are the most critical swine diets because they provide the first feed the baby pig consumes and affects the future development of the pig. These diets are usually very high in the amino acids found in protein because weaning is a critical time for muscle growth, which requires protein. The level of protein is generally 18 to 22 percent, but it may be as high 26 percent. Feed generally contains milk and blood proteins. As the pig grows, the levels of protein and amino acids are reduced because the pig's requirements decrease. The graph in Figure 6.1 illustrates this change. A phase feeding program may be used to meet the changing nutritional needs of young pigs. Easy access to water is also important.

Figure 6.1 - Nutrient Requirements



Introduction to Swine Production

Growing and finishing diets may also be fed in phases in which the amount of protein varies. The level of protein is usually 14 to 16 percent. The amount of protein in the diet is gradually reduced. Also, many producers feed gilts separately from barrows. Gilts generally grow more slowly than barrows and require more protein to reach maximum levels of performance. Feeding them separately allows producers to match the diet to the needs of the pig.

As the graph in Figure 6.2 illustrates, swine producers are better able to meet the nutrient requirements of the pig by phase feeding. The animals will then perform closer to their genetic potential. Producers will also save money because they do not overfeed the pigs.

Production Efficiency

Swine producers measure production efficiency for finishing pigs in several ways. Some of the most common are: days to 230 pounds, feed to gain, and gain to feed.

Days to 230 pounds is a reflection of the growth rate of the producer's market hogs; it indicates the number of days between farrowing and reaching a market weight of 230 pounds. Pigs that grow more quickly will take fewer days to reach this weight. Fewer days on feed usually means that feed costs will be lower and translates into the ability to produce more animals with the given facilities.

Feed to gain is a measure of how many pounds of feed are necessary to produce a pound of gain in the pig. To calculate feed to gain, producers simply divide the pounds of feed fed by the pounds of pork produced, or the number of animals multiplied by the pounds each gained.

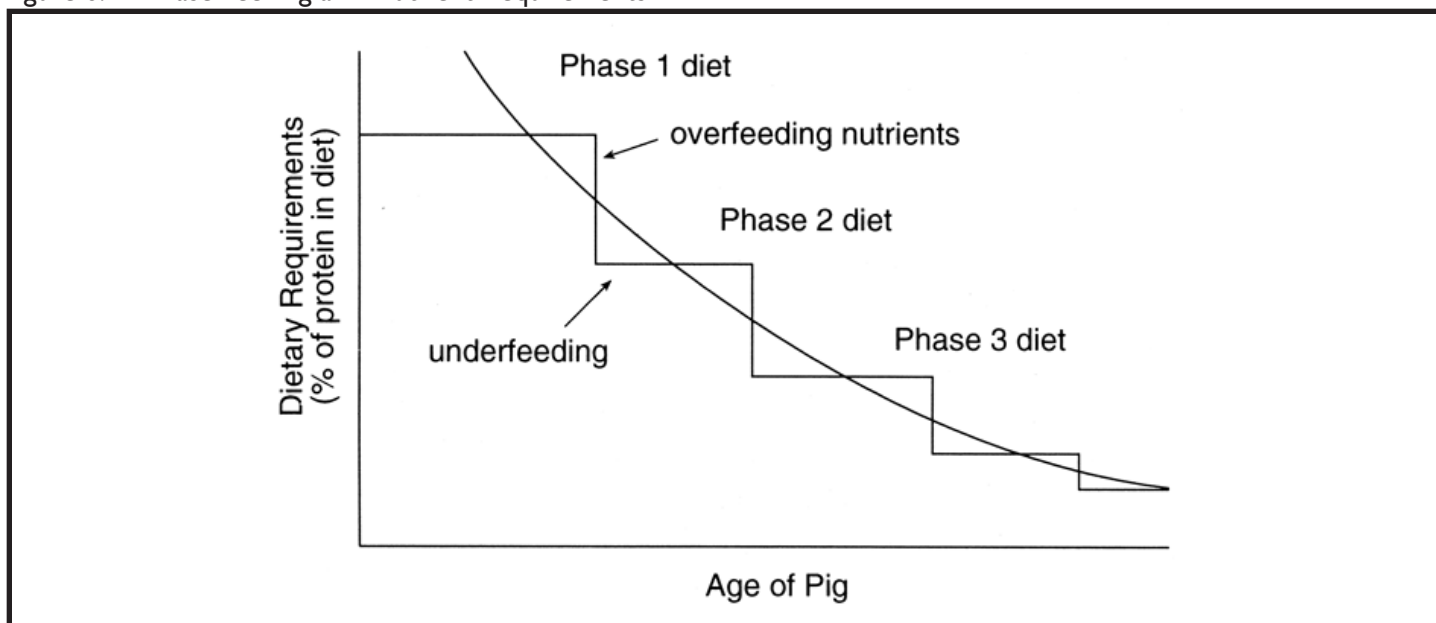
Suppose a producer fed 6,000 pounds of feed to 10 pigs. The producer purchased the pigs at 50 pounds and sold them at 250 pounds. Feed to gain for these pigs is calculated below.

$$\frac{6000 \text{ pounds feed}}{10 \text{ pigs} \times (250 \text{ lbs.} - 50 \text{ lbs.})} = \frac{6000}{2000} = 3.1$$

For every three pounds of feed consumed the pigs gained one pound in weight. A lower feed to gain ratio is desirable, since the pigs will then require less feed. If less feed is required, then feed costs are lower.

Gain to feed is a measure of the efficiency of gain. It is calculated by dividing pounds of gain by the pounds of feed fed. High numbers are desirable. For example, if a pig consumed 600 pounds of feed and gained 200 pounds, the pig would have a feed efficiency of one to three (200/600). Producers compare gain to feed when selecting animals to be used as reproductive replacements for the herd.

Figure 6.2 - Phase Feeding and Nutrient Requirements



Reproductive Management

Proper reproductive management is required for a producer to maximize production. The gestation cycle in swine lasts an average of 114 days. Producers need to keep accurate breeding records to know which females are due to farrow and when farrowing will occur. Sows should be placed in the farrowing house several days before their due date.

After farrowing, swine producers may take pigs from large litters and foster them to sows with small litters to balance litter size; fostering should take place within 24 hours of birth for both litters. This practice helps achieve a more uniform weaning size. Fostering also helps increase the survival rate of pigs. Fostering should be done as soon after birth as possible to ensure success. The largest piglets in the litter should be fostered.

Most producers will wean piglets when they are between 14 and 28 days of age, depending on their production system. They wean piglets from a group of sows on the same day to maintain the farrowing group. Sows will usually come into estrus three to seven days after weaning. Most producers will breed the female as soon after weaning as possible to maximize production.

Artificial insemination (AI) is becoming more common in the swine industry. Producers may purchase semen or buy superior boars and collect semen from the boars on the farm. AI allows superior boars to be used

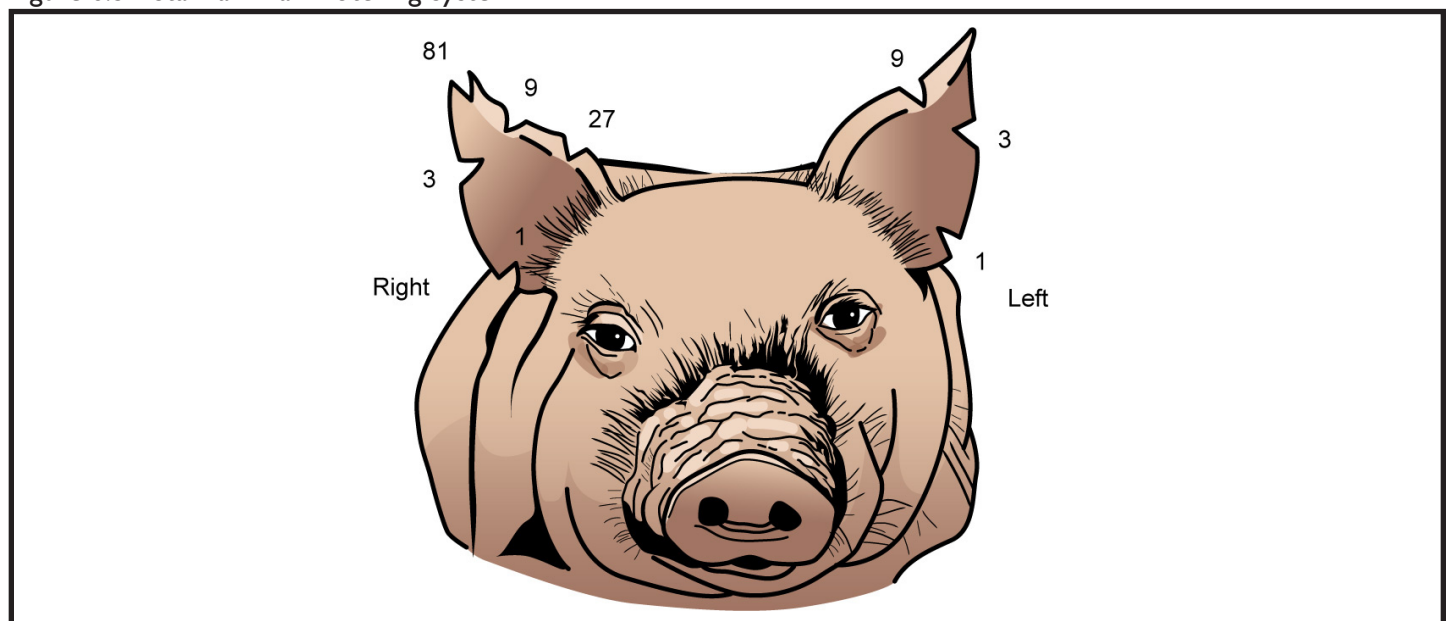
more extensively than in natural mating. When using AI, producers will check gilts and sows for estrus (heat) and then typically artificially inseminate the animal twice. Signs of estrus in sows and gilts include restlessness, mounting other hogs, and swelling of the vulva.

An important factor for producers to remember is that sows usually have three years of productive life. After three years of farrowing, they generally experience a decline in productivity.

Processing Baby Pigs

After the sow farrows, piglets are usually processed at one day of age. The producer should remove the navel cord soon after the birth. Iodine is then applied to the pig's navel to prevent infection. Producers clip the needle teeth from the piglet so it will not injure the sow's udder when nursing and will not hurt other pigs when fighting. Also, they should dock the piglet's tail to prevent tail biting. Baby pigs are given an iron shot to help prevent anemia. Some producers castrate the males at processing. Others let the pigs reach approximately one week of age before castrating the boars.

Figure 6.3 - Standard Ear Notching System



Introduction to Swine Production

Pigs must be ear notched using an ear notching system. Ear notching is a permanent and easy-to-read form of identification. Several different systems of ear notching can be used to identify pigs. Figure 6.3 shows a standard system of ear notching. It can be used to identify up to 161 litters. The ear is divided into quadrants. Each quadrant can have one or two notches. Notches on the right ear indicate the litter number; notches on the left ear identify the number of the piglet. Adding the numbers of the notches on each ear gives the litter and piglet numbers for that animal. In this system, after the 80th litter, the top of the right ear is notched to designate litter 81.

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Summary

Swine producers must make sure to meet nutrient requirements for proper herd health and production. Diets vary depending on the stage of growth or production. For example, phase feeding involves feeding diets with different levels of protein at different stages to match the nutrient requirements. Various methods can be used to measure the efficiency of production, such as the number of days to 230 pounds, feed to gain ratios, and gain to feed. Proper reproductive management is necessary for efficient breeding. After farrowing, several steps should be followed when processing piglets.

Credits

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