



Building Strong Families

Life resources for health, wellness, finances, and positive relationships.

Just like people, livestock must have certain nutrients in their daily feed to remain healthy and continue to grow.

In general, nutrients are divided into five categories: Water, protein, carbohydrates, minerals, and vitamins. Except for water, which is largely supplied separately, nutrients are supplied to animals in the food materials we provide them which are known as feedstuffs.

Water

Water is so common that we seldom think of it as a true nutrient, but it is the most essential and the cheapest of all nutrients. Water is the largest single component of a pig's body. It also passes through the body, transporting nutrients and removing wastes. Depriving pigs of water reduces feed consumption and limits growth. Therefore, ample water should be provided continuously. A pig needs to drink two to three pounds of water for every pound of feed it eats. Reduced water consumption will limit performance as significantly as a lack of any other nutrient. It is important that you make certain your animals always have all the fresh, clean water they need and that it is relatively cool in the summer and warmer in the winter.



Protein

Proteins are composed of 20 simpler building blocks called amino acids, and it is actually the amino acids that are the essential nutrients. Pigs, in fact, do not specifically need protein, but rather require amino acids to grow their muscles. Ten of the amino acids are called essential because these cannot be produced within the pig's body. A common feedstuff that contains protein is soybean meal.



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Kansas State University Agricultural Experiment Station and Cooperative Extension Service.

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Energy

Energy is technically not a nutrient but is a result of the metabolism of carbohydrates (starch) and fats that are in a pig's diet. Carbohydrates and fats are the main sources of energy in the diet. They are the primary fuels that are used in maintaining body temperature and producing muscular movement. Energy must be provided in large amounts over what is needed for maintenance to achieve optimum growth and reproduction responses. Energy is needed in many chemical changes that occur within the body. Because energy is needed constantly by a growing pig, the body stores some energy in the form of fat. The major source of dietary energy for the growing pig is the carbohydrate component of grains in their feed, such as corn.



Minerals

Minerals are needed in body tissues and to assist in some of the body's chemical reactions. In particular, calcium, phosphorus, and salt (often referred to as macro-minerals) are major needs. Calcium is important in bone formation. Phosphorus is also involved in bone building and assists in energy utilization. Salt is important for maintaining good appetites and water consumption in hogs. Other minerals are needed in small amounts and are called trace minerals (or micro-minerals). These include iron, copper, zinc, magnesium, manganese, iodine, and selenium.



Vitamins

Vitamins are compounds that assist the body in the assimilation and use of the other nutrients. They are described in two classes, fat soluble (A, D, E, K), and water soluble (the B vitamins). The body can keep reserves of the fat soluble vitamins for a time, but the water soluble vitamins must be supplied in the diet daily.



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