

Livestock Feed

The old saying, “You get what you pay for” especially holds true in deciding which feed to purchase for you livestock (cattle, horses, pigs, sheep, goats, poultry, or rabbits) and even your dogs and cats (domestic pets). The best feed is not always the most expensive.

Whether you go to the local feed store to buy feed for livestock or to the grocery store or pet store to buy dog food, you must decide which feed is best for your animals. The feed store may only have four or five different feeds for your horse, in which case it may be relatively easy to choose the best product. However, if you travel to the pet store to purchase food for your domestic pets, there may be 20 or more types of food available.

The most important point to consider in selecting a feed is that it meets the nutritional needs of your animal. Then you will determine which feed that meets those nutritional needs is most economical and convenient for you to feed.

Feed a Pig Dog Food?

Typically, you do not feed a pig dog food or horses chicken feed. Each feed is specifically formulated to meet the nutritional needs of a particular animal. Additionally, the nutrients are supplied in a product that is palatable or “tasty” to ensure that the animals will actually eat the product. Most importantly, a feed that is healthy for your dog to eat may not be

healthy for your pig to consume. Some feed may even be harmful if consumed by an animal it was not intended for. Thus, it is extremely important to purchase a feed that is specifically formulated for a specific animal in order to meet its nutritional needs and to ensure it stays healthy.

Guaranteed Analysis

Each bag of commercially produced feed lists the amount of specific nutrients guaranteed in the feed. Crude protein, crude fat, and crude fiber are the nutrients that must be guaranteed on all feeds. Sometimes guaranteed maximum moisture content of the feed may also be included.



Crude Protein

Proteins are made up of amino acids that are referred to as the “building blocks” of muscle. Protein is one of the most important nutrients in the diet of animals and is typically the most

expensive nutrient in animal feed. Thus, the value of a feed is most often determined by the cost per pound of protein. For example, cattle are often fed protein supplements during the winter to meet their dietary requirements. A rancher has the option to buy a 20 percent protein supplement for \$4.75 per 50 pound bag or a 15 percent

protein supplement for \$4.20 per 50 pound bag. Which product is the best buy for the rancher? You might automatically conclude that the cheapest bag is the most economical. However, you should determine the cost per pound of protein.

Cost per pound of protein

20 percent protein supplement

50 pounds x .20 = 10 pounds
protein per bag of feed

$\$4.75 \div 10 = \4.75 per pound of
protein

15 percent protein supplement

50 pounds x .15 = 7.5
protein per bag of feed

$\$4.20 \div 7.5 = \5.60 per pound of
protein

The 15 percent protein supplement may have been cheaper per 50-pound bag, but it actually cost 9 cents more per pound of protein than the 20 percent protein supplement.

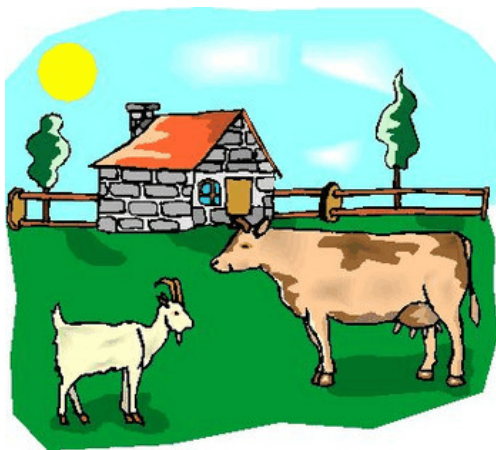
Non- Protein Nitrogen (NPN) such as urea can be added to the feeds of ruminants (i.e., cattle or sheep) to reduce the cost because they are most economical than natural protein from vegetable sources (i.e. soybean or cottonseed meal). Non-ruminants or monogastric animals (i.e., horses or pigs), however, should not be allowed access to feeds containing NPN. Most natural protein sources have a fairly constant nutritional value when fed to livestock. In contrast, the feeding value of NPN products varies with the digestible energy content of the diet, the amount of natural protein in the diet, and the protein

supplement. Urea can be efficiently substituted for natural protein in high-energy diets (i.e., corn) of heavy cattle (greater than 800 pounds). Lightweight cattle (less than 600 pounds) should be fed natural protein because they cannot efficiently use NPN for their protein needs.

Maximum Crude Fiber

The energy in animal diets is usually expressed as Total Digestible Nutrients (TDN). When you study a feed tag or label, however, the TDN is not typically listed because it is a difficult to determine. Instead, crude fiber can be used to estimate the energy content of feeds.

Crude fiber is a measure of the non-useful portion of the feed and provides a measure of the relative digestibility of the feed. As the percent crude fiber increases, the digestible energy of the feed decreases. For example, feed with high crude fiber content (i.e., 14 percent) will be of lower value than a feed with low fiber content (i.e., 4 percent). The table below demonstrates the relationship between crude fiber and energy.



	<u>Maximum Crude Fiber %</u>	
<u>TDN%</u>		
	1.04	79
6.0	76	
8.0	73	
10.0	70	
12.0	67	
14.0	64	
18.0	58	
22.0	52	

Minimum Crude Fat

Fat has an energy value of 2.20 times the value of carbohydrate feedstuffs (i.e., corn or barley). Thus, it can be used as an economical source of energy for animals. Including more than 5 percent of fat in the total diet of ruminants, however, may reduce the efficiency of digestion and reduce feed intake.

Drug Additives

A feed containing drugs must be labeled with “medicated” following the brand or product name. Medicated feeds will show the name and the amount of each drug, the purpose for which the drug is added, directions for use and a precaution and warning statement. Caution must be used when feeding medicated feeds. They should only be fed to the animals for which they are labeled. Most importantly, withdrawal times must be followed when feeding medicated feeds to animals that are intended for milk or meat production. This is important to prevent the possible introduction of animal drug residues into the food production chain intended for humans.

Maximum Moisture Content

Liquid feed supplements for livestock must show a guarantee for the maximum moisture content. Additionally, pet foods must have a similar guarantee. Animals must consume more of a high moisture feed than a low moisture feed in order to satisfy nutritional needs. Just remember water is less expensive from your water hose than packaged in an animal feed.

Feeding Conveniences

Feeding convenience is not an essential nutrient for your animals but it is an important point for you to consider when purchasing feed. For example, if you are feeding a wet dog good, you must use a can opener to open the can, spoon the dog food out, and then clean up the mess. In contrast,



if you feed your dog a dry food, you only have to scoop the food from a bag and pour it into the dish. You must decide which is most convenient for you without sacrificing the nutrition and health of your animal. An example with cattle would be feeding range cubes as a supplement to pasture or hay. The feed they need is packaged in a cube that is easy for them to eat from the ground and minimizes waste. If you are supplementing cattle and do not have access to feed troughs, cubes may be more convenient than feeding a non-cubed feed.

Glossary

Additive- A substance added to feed in relatively small amount to have a desired effect on the feed or animal.

Amino Acid- Composed of carbon, hydrogen, oxygen, nitrogen, and occasionally sulfur. Amino Acids are typically considered the building blocks of proteins.

Crude Fat- An estimate of fat in feeds. Fat has an energy value of approximately 2.25 times the value of carbohydrates.

Crude Fiber- A measure of non-useful portion of a feed.

Diet- The kind and amount of feed an animal will consume in one day.

Digestible- Capable of being broken down into an absorbable form.

Drug Residue- The remainder of a drug present in the body of an animal after the drug is administered.

Energy- Power used to drive reactions in the body that are necessary to convert feed into animals products and to keep animals functioning.

Guaranteed Analysis- A guarantee of the nutrient content of a chimerical feed.

Monogastric- Animals that have a stomach with a single compartment (i.e., horses, pigs, dogs).

Nutrients- Chemicals derived from feeds that animals must receive to support life.

Palatable- Pleasant to the sense of taste.

Protein- A substance that is made up of amino acids and contains approximately 16 percent nitrogen.

Supplement- Provides nutrients that are lacking in an animal's primary diet.

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