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**Browsing Academy**  
**WHAT'S IN THAT SACK?**  
**HOW TO READ A FEED TAG**

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*Ingredient* and *Utilization* within the animal's body:

Grain Products – energy, carbohydrate source (barley, beans, corn, sorghum)

Processed Grain By-Products – fiber content, readily available carbohydrates  
(screenings from processing, wheat bran, hominy feed)

Plant Protein Products – readily available concentrated protein, fatty acid source  
(cottonseed meal, soybean meal, linseed meal, corn gluten meal, brewer's dried  
grains)

Forage Products – high in protein and calcium, vitamin A (carotene)  
roughages (alfalfa hay, grass hay, clover hay)

Molasses – energy source, improves rumen microbial activity (beet, citrus and sugar  
cane)

Ground Limestone (calcium source) – bone and teeth formation, muscle contractions and  
milk production

Dicalcium Phosphate – bone and teeth formation, metabolic reactions and component of  
protein in soft tissue

Salt (sodium chloride) – osmotic pressure of blood, interstitial fluid, formation of  
digestive juices

DL-Methionine – an essential amino acid containing sulfur

**Vitamins** – These are organic substances that are required by the goat in very small  
amounts to regulate various body functions to sustain normal health, growth, production  
and reproduction.

Vitamin D – activated animal sterol (vitamin D3) – for calcium absorption, calcium and  
phosphorus metabolism

Vitamin A – normal sight (visual purple), epithelial cells and bone formation

Vitamin E supplement – cell membrane maintenance and metabolic regulator of cell  
nucleus, synthesis of sulfur containing amino acids

Vitamin K source – prothrombin formation and normal blood clotting

Niacin – in enzyme systems relating to carbohydrate, protein, and fat metabolism and tissue respiration

Vitamin B12 – propionic acid metabolism and red blood cell maturation

Riboflavin (VB2) – oxidation and reduction reactions with enzyme systems related to energy and protein metabolism and cellular respiration

Thiamine (VB1) – coenzyme of great necessity for energy metabolism

Pantothenic acid – metabolism of carbohydrates, fatty acids and amino acids (usually combined with a calcium source)

Folic Acid – maintains normal hematopoiesis by transferring single carbon units

Choline Chloride – osmotic pressure and hydrochloric acid in digestion (has to do with lipid and fatty acid metabolism in the liver)

**Minerals** – The inorganic component influencing a multitude of different functions within the goats body and required in greatly varying amounts.

Sodium Selenite (Selenium) – vitamin E and lipid absorption, osmotic pressure and maintenance of cell membranes

Manganous Oxide – enzyme activator for oxidative phosphorylation, amino acid metabolism and fatty acid synthesis, enzyme systems influencing reproduction

Zinc Oxide – enzyme systems for peptidases and carbonic anhydrase, promotes wound healing and healthy hair and skin, promotes general thriftiness and growth

Iron Carbonate – calcium:phosphorus ratio influences absorption

Copper Oxide – required for metabolism of iron, myelin of nerves, hemoglobin synthesis and synthesis of keratin for hair and wool growth

Potassium Iodine – osmotic pressure, thyroxin (hormone produced by the thyroid gland), rumen digestion and neuromuscular activity

Iron Sulfate – amino acids, cellular and tissue respiration (oxygen transport), hemoglobin formation

Calcium Carbonate – another source of calcium

Magnesium – carbohydrate metabolism, enzyme system function and nervous system

Sulfur – component of amino acids (cystine/methionine) and vitamins (biotin/thiamine)

Iodine – thyroxin by the thyroid gland

Cobalt – component of vitamin B12, rumen synthesis of vitamin B12 (protein synthesis)

Fluorine – retards osteoporosis in mature animals

Molybdenum – stimulates action of rumen organisms

***Preservatives*** – Ethoxyquin and Calcium Propionate – prevents deterioration of vitamins and inhibits molds