



# BASICS OF EQUINE NUTRITION

## Salt

One of the basic requirements for your equine companions is salt. Horses deficient in salt will lick or chew on mangers, fences, and other objects. They will be seen eating or licking dirt, or licking rocks. Horses that sweat profusely can lose as much as 82.5 grams of sodium per day. The need for salt varies considerably, depending on a horse's level of work, riding or heat stress. Because sweat contains about 0.7% salt, the more a horse exercises the more salt is lost through sweating and the more it is needed in the diet. The amount of exercise, the outside temperature and humidity are going to have effects on the needed daily intake requirements for each horse.

Manufactured feeds will generally contain 0.5%-1.0% salt, but a performance horse may require 4-6 ounces of salt per day to maintain electrolyte balance. According to the Salt Institute "Even though the body only contains about 0.2% sodium, it is essential for life and is highly regulated. About half of the sodium in the body is in the soft tissues; the other half in bones. Sodium makes up about 93% of the basic mineral elements in the blood serum and is the chief cation (positively charged ion) regulating blood pH. The ability of muscles to contract is dependent on proper sodium concentrations. Sodium plays major roles in nerve impulse transmission and the rhythmic maintenance of heart action. Efficient absorption of amino acids and monosaccharides from the small intestine requires adequate sodium.

The other nutrient in salt, chloride is also essential for life. Chloride is the primary anion (negatively charged ion) in blood, and represents about two thirds of its acidic ions. The chloride shift, movement of chloride in and out of the red blood cells, is essential in maintaining the acid-base balance of the blood. Chloride is also a necessary part of the hydrochloric acid produced by the stomach which is required to digest most foods."

## Trace Minerals

There are seven trace minerals that have been shown to be needed in supplementing equine diets. They are iron, copper, zinc, manganese, cobalt, iodine and selenium. They are needed in very small amounts, or traces, in the diet, and hence their name, "trace minerals." Many times their requirement is expressed as parts per million (ppm) or as milligrams per kilogram (mg/kg) of diet dry matter. Manufactured feeds will generally supplement with calcium, phosphorus, copper, selenium and zinc. Trace amount of minerals are also found in forages. The amounts found in hay and grasses are dependant upon the mineral content of the soil in which they are grown. Since these minerals are needed in very small amounts, supplementation of specific minerals is rarely necessary. There are areas of the country where the soil is deficient in minerals such as selenium. Supplementation should be discussed with your veterinarian as selenium, along with most minerals, can be toxic or have negative health effects if overdosed.



## Salt Sources

Salt, preferably with added trace minerals, should be provided free choice for horses. Salt formulated for horses can be purchased at your local feed stores. It comes in regular white salt or a red version that has trace minerals added. Salt blocks are easy to handle and hang in stalls on hangers designed for this purpose. However, some horses can have trouble getting enough from salt on these hangers and tend to chew the blocks breaking off chunks that get lost in bedding and wasted. Loose salt can be purchased in either in plain or mineral added versions. This loose form can be easier for horses to access, but needs to be in containers such as hog pans or special feeders that can be attached to the wall of the stall. If salt is offered outside, it needs to be in a covered container that protects it from the weather.

Specialty companies offer salt that has naturally occurring minerals in it as opposed to some companies that add minerals to the salt. Be sure to check the chemical analysis of the salt that you are purchasing. There has been a recent upsurge in Himalayan salt products for horses. According to the chemical analysis of the Himalayan salt products, in addition to the minerals specified above they contain Aluminum and Fluoride. Neither of these minerals is required for equine nutrition and in fact have been shown in research studies to have detrimental effects on the body. A number of published studies conducted as far back as 1976, have shown that the combination of Aluminum and Fluoride in the diet decrease the bodies ability to fight off infection, contributed to alterations in brain tissue that coincide with what is seen in Alzheimer's disease and dementia, and impair the functions of the nervous system. Although the Himalayan salt products are "a naturally mined" salt product, that does not necessarily mean that it is safe to eat.

Purchase products that are designed for the species that you are feeding it to. Provide salt free choice so that horses can have access to what they need. Always be sure that adequate water is available.