to the ground. To decrease the amount of dirt or sand that the horse eats, a rubber mat can be placed under the feeder.

Limit Grain Intake

Epidemiologic research has shown that horses that eat more than 5.5 pounds of grain in their daily diet have an increased risk of colic compared to horses that eat less grain.[2-3] The risk of colic increases even more as horses consume more than 11 pounds of grain each day.[2] Adult horses in a physiologic state of maintenance do not require grain in their diet. In fact, intake of excessive calories from grain or grain supplements often leads to obesity. Horses that are exercising at a moderate to intense level, mares that are pregnant or lactating, and growing foals may need additional calories from grain or from supplemental fat. Even equine athletes and reproductively active mares should be fed a limited amount of grain, not to exceed 20-30% of the total weight of the diet. A 1000 pound adult horse that eats 2% of their body weight (20 pounds) in feed per day should not be fed more than 6 pounds of grain or grain supplement in a day. Feeding a growing foal requires even more care and limited grain intake to ensure that the growth of the foal is carefully controlled.

Water: The most essential nutrient

A 1000 pound horse drinks between 7 to 9 gallons of water each day. Water needs increase during hot and humid weather, following exercise, and during lactation. Fresh water must always be available for a horse. Buckets can be placed in stalls that have automatic waterers, to ensure the horse always has a supply of water. In the winter warmed or supplemental water sources should be provided.

Salt Blocks

A plain salt block offers a source of sodium and chloride to a horse. Trace mineral blocks are consumed at variable rates by horses, and are not recommended when a balanced vitamin and mineral supplement like Platinum Performance™ Equine is fed.

Make All Ration Changes Slowly

Rapid changes in the ration should always be avoided, because horses are more likely to colic after their diet has been abruptly altered.[2-6] Horses should be transitioned to new feeds over 7 to 14 days. This includes changing the horse between shipments of the same type of hay. Introduction to grass pasture should also be done slowly, increasing the time in pasture by 1-2 hours every 3-4 days.

Putting it into Practice

- Adult horses will thrive on a ration of forage, and a balanced vitamin, mineral, antioxidant and omega-3 fatty acid supplement.
- Grain and grain-based supplements should be limited in a horse's diet to decrease health complications, and to prevent obesity.
- To help prevent colic, all diet changes should be made slowly, over 7-14 days.
- Veterinarians should be consulted before any changes are made to the diet of a horse.

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The Natural Diet – Feeding for Health

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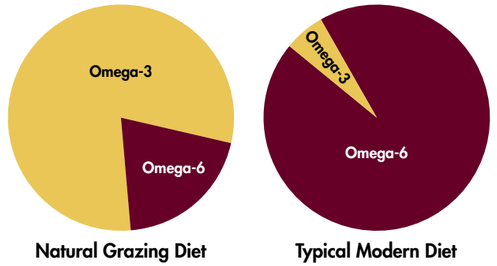
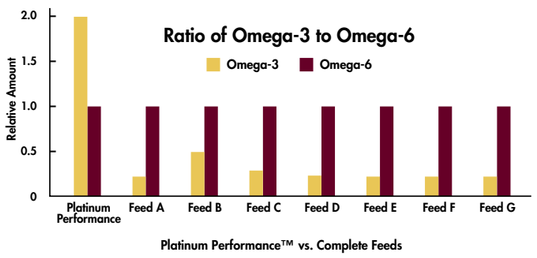
The goal of any equine nutrition program is to design a diet that will optimize the health of the horse. The first step in creating an equine ration is to use nature to show us what horses would consume without human intervention.

Before the horse was domesticated, herds roamed grassland areas and consumed a natural diet. Historians have postulated that horses consumed a diet of grass, browse and other vegetation, resulting in ingestion of a balanced diet. Fresh grass is rich in fat soluble vitamins, and omega-3 essential fatty acids, nutrients that are lost during forage processing, and storage. Higher concentrations of omega-3 fatty acids in the diet results in the production of less potent inflammatory mediators compared to diets high in omega-6 fatty acids. It has been estimated that the natural diet of the grazing horse contained up to 5 times greater omega-3 essential fatty acids compared to omega-6 essential fatty acids.[1]

Modern feeding practices have removed horses from a complete grazing environment. Although some horses still have access to grass pasture, many more are fed with a combination of hay and grain or a grain-based supplemental commercial feed. This increase in grain-based feeds has resulted in an increase in the dietary concentration of omega-6 fatty acids, and a decrease in the concentration of omega-3 fatty acids. It has been estimated that the diet of the modern horse can provide up to 18 times more omega-6 than omega-3 essential fatty acids.[1]





The healthy horse at a physiologic state of maintenance can thrive without the calories, sugar and starch found in grain. Feeding too much grain can lead to problems from colic, enteritis, colitis, OCD and laminitis. Muscle diseases including polysaccharide storage myopathy, equine polysaccharide storage myopathy, and recurrent exertional rhabdomyolysis are worsened when high grain diets are fed. Foals that receive too many calories from grain can suffer complications from developmental orthopedic disease. In recent years, obesity, and diseases including equine metabolic syndrome, have become widespread in the equine population, and are largely due to horses being overfed.

Feeding a natural diet will improve health and longevity in the modern horse

Forage, as either grass or hay, is essential to the diet of the horse. Horses can obtain much of their essential nutrients including energy, protein, essential fatty acids, minerals, and vitamins, from fresh grass or hay.

The nutrient quality of forage depends on the type and stage of growth of the forage, the location where the forage is grown, the growing season, and the harvesting conditions. Once grass is cut, dried, and processed to make hay, the concentration of essential fatty acids (EFA) and fat soluble vitamins (A, D, E) decrease. (Figure 1, 2) Prolonged storage of hay, and exposure to sun and moisture, further reduces the concentration of fat soluble vitamins in hay.

Figure 1. **Concentration of Vitamin E in Alfalfa Hay Before and After Harvest**

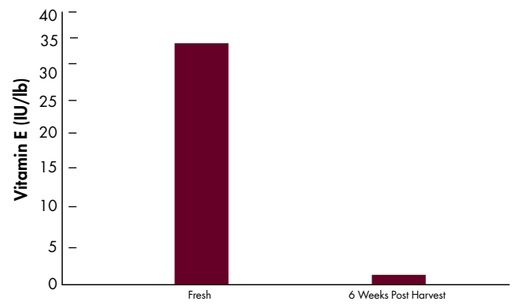
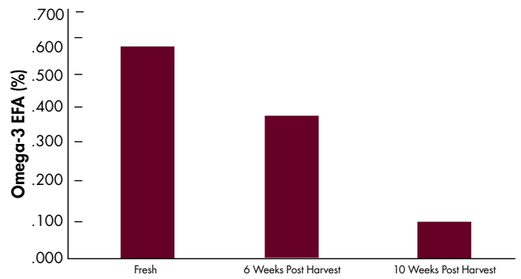


Figure 2. **Concentration of Omega-3 EFA in Alfalfa Hay Before and After Harvest**



Forage may either be deficient in, or may contain an excess of trace minerals like copper and selenium. It is important to feed a balanced ration, designed to meet nutrient requirements based on the horse's level of activity or life stage.

The best way to determine the nutrient content of either pasture grass or hay is to have the forage analyzed.

Forage analysis is used to design performance horse rations, or therapeutic rations to manage a specific disease.

How To Feed The Modern Horse

Feed to maintain an ideal body condition score and body weight

The body weight and body condition score (BCS) of a horse should be measured on a regular basis to ensure the horse maintains an appropriate weight. Body weight can be estimated using a weight tape. Complimentary BCS charts are available from Platinum Performance, Inc.

The BCS system can be used to easily estimate the energy requirements of a horse before adjustments are made to the ration. The energy and protein content of a ration is adequate if a horse can maintain an ideal body condition score of 4-6.

Once the BCS drops below 4, the ration should be revised to provide additional energy and protein. Calories can be added to forage (pasture or hay), with soaked beet pulp, oils such as the Platinum Performance Healthy Weight, or commercial supplemental feeds. Protein can be added using a protein supplemented commercial feed, or using Equi-Whey™, a powdered protein product. Adding grain to increase the calories in a ration should be approached with caution.

Horses with a BCS above 6 require a restricted calorie diet to promote weight loss. An overweight horse should have calories from grain, commercial feeds, and oil removed from the ration. Omega-3 essential fatty acids are still important to include in weight loss rations.

Veterinarians serve as an excellent resource in designing a balanced ration. Platinum Performance, Inc. offers a ration evaluation service for horses that have special nutritional requirements.

Back to Nature: Feeding pasture and hay

At least 70% of the horse's diet should include forage and many adult horses will thrive only on a forage diet. A balanced vitamin, mineral, antioxidant, and essential fatty acid supplement like Platinum Performance™ Equine, should be added to the ration. All feed ingredients should be weighed before they are fed so the calorie content of the ration can be calculated. An ideal equine feeding program allows a horse to graze, or to eat small meals throughout the day. This style of feeding improves gastrointestinal health, and may also improve glucose and insulin regulation. Despite the benefit of pasture grazing, some horses must be restricted from pasture to prevent the development of laminits, or excessive weight gain.

Overgrazing horses in a pasture should be avoided to prevent ingestion of sand or dirt, which can cause colic. Horses fed hay often throw their hay out of a feeder, on