

# *General Nutrition for Horses*

In order to develop a feeding program for horses one must consider two (2) major facts that will affect all feeding decisions:

- **What are the feeding requirements and behavior that horses have for surviving in a “wild state”?**
- **How do we combine nature’s requirements with the demands and management that man requires of the domestic horse?**

## *Grazers*

Horses are designed for continuous foraging. For animals to survive on diets with a high fiber content they must take one of two approaches. Ruminants such as cattle rely on consuming large quantities of feed, holding it (the need for a rumen), additional processing (chewing their cud) and maximizing the growth and use of bacteria to provide the majority of nutrients from the forage. Others, such as horses, rely upon consuming larger amounts of forage, perhaps extracting less nutrition from the forage, but making up for it in volume. This basic difference is reflected in eating behavior. When cattle graze they tend to grab large amounts of grass with each bite and although they tend to graze areas of new growth they do not generally select within a bite. Horses have very adept lips for selecting the finer portions of the forage to consume, and are much better at “preferentially” grazing the better or more nutrient dense forages from a pasture.

Because horses feeding behavior expects them to be continuously consuming feed, their digestive tract is designed to meet that need. Interruptions to this plan leaves horses open to colic. As horses are not “designed” for large infrequent meals, particularly of very rich feeds. Horsemen well understand that large meals of grain can lead to serious health issues including colic and laminitis.

- **Ideally horses are provided a constant opportunity to consume forage. The more we can mimic that situation, the better our nutritional program will work.**

## *Additional Demands Placed by Man*

Through genetic selection and management, the demands on our domestic horse do differ from their wild cousins. Increased size, the desire for bright shiny coats, and the need for the additional work of carrying a rider or pulling a wagon increases the nutritional needs. Because we restrict their movement they cannot forage over great distances possible reducing the variety of minerals available and increasing the potential for parasite and disease opportunities. As such our domestic horses’ diets, which need to be forage based, need to be supplemented.

- **All horses should receive a source of additional vitamins and minerals**
- **Many will require additional energy and possibly protein to meet the demands placed on them.**

## Current “Hot Topics” in Equine Nutrition

The market place is filled with products designed to meet the latest “hot topic” in equine nutrition. In fact there has been more new information generated in equine nutrition in the past 5 years than the previous 15. However when planning a nutrition program it is important to evaluate the information in regards to its use and application. It is our philosophy to design a feeding *program* that meets the nutritional needs for most horses and to work with our customers to develop custom programs for their clients that have special needs. In designing Prince Regency Equine Products we have taken advantage of recent advances in nutrition and key new ingredients that allow us to meet the needs of the horse. At the same time we have avoided the “everything, including the kitchen sink” approach that some marketers have taken.

### **Feeding Fats.**

Horses have the ability to digest fat to a much greater extent than one might have predicted based upon natural forages in the diet. Fats are high energy and can be fed without increased concern for acidosis associated with high carbohydrate feeding. Fats can also decrease the speed at which the stomach empties and reduces the potential insulin spike associated with high carbohydrate feeding. With the exception of our Draft Formula Concentrate, all Prince Regency Feeds are formulated with additional fat.

### **Omega 3 and Omega 6 fatty acids.**

There has recently been a great deal of interest in Omega 3 fatty acids. Omega 3 fatty acids have been demonstrated to improve reproductive efficiency in other species and their anti-inflammatory action may be beneficial in exercise induced inflammation, although Kansas State researchers found no benefit in EIPH (Exercise Induced Pulmonary Hemorrhages). It should also be remembered that the Omega 6 fatty acids also have their purpose. Forages are naturally high in Omega 3 content, although their total fat content is relatively low. We have used fat sources in our Prince Regency Feeds that are considered fair to high in Omega 3 content. However at this time the data is not strong enough to support very high levels of Omega 3 and their associated higher cost.

### **Low Glycemic diets.**

There is a strong market push for low glycemic diets, i.e. low in starches and sugars that induce insulin release. There are definite situations where these diets are called for: horses with a history of tying up, those that easily become acidotic or have laminitis, horses with Cushing’s syndrome, fat horses that have become insulin resistant. In many cases we are trying to avoid a spike in the insulin secretion level. The easiest way to avoid this is to feed many small meals, regardless of the carbohydrate and fat levels. Supplemental fat to a carbohydrate based diet has also been shown to dramatically decrease insulin release, and may be do to slower emptying of the stomach. All of the Prince Regency horse feeds have added fat, although the amount varies with use. We prefer to work with our customer to use local ingredients to put a ration together for horses that truly need a low glycemic/starch diet.

## **Probiotics**

Probiotics is a term given to a group of beneficial bacteria that grow in the small intestine, primarily lactic acid producer that may help absorption of nutrients by lowering the pH in the micro-villi, and through competitive inhibition of more pathogenic bacteria such as E. coli. These microbial products do not work in the lower gut where different species of bacteria proliferate. Probiotic bacteria are anaerobic in nature and die with exposure to Oxygen and also do not survive the pelleting process. Also horses normally have an adequate source of these bacteria already adapted for living within the gut. We do believe that with stress, such as recovery from surgery, transportation or other stressful events, probiotic use is justified, but recommend the use of an oil based paste product that is directly applied to the animal. Prince Regency Equine Products do contain yeast and yeast extracts, which can support the “good” bacteria in the small intestine, however these ingredients are used primarily for their nutritive value.

## **Key Facts and “Thumb Rules”**

### **The most important nutrient - WATER**

A good source of clean water is necessary. Poor water intake leads to reduced performance and reduced feed intake.

### **Horses should have free access to salt.**

Ionic balance for the horse can change with the weather and activity level and a good source of available salt helps protect against any sudden changes. Some free choice minerals rely upon salt intake to control mineral consumption, horses in these management systems should not have access to free salt. Many producers prefer to buy trace mineral salt block, however in reality these products are a poor supplier of needed trace minerals.

### **Horses will consume approximately 2.5 % of their body weight in Dry Matter Daily.**

If a horse is consuming pasture that is only 30 % dry matter, a 1200 pound horse can be expected to consume 100 pounds of pasture a day

### **The minimum forage intake should be 1.5% of body weight in Dry Matter Intake.**

Horses are grazers by nature less than 1.5% forage intake may leave horses more prone to colic, more likely to exhibit vices such as fence chewing and may be too reliant on the grain in the diet.

### **Horses are creatures of habit.**

Horses anticipate feeding time. Abrupt changes in schedule can lead to digestive upset as well as aggressive behavior.

### **Horses are greedy.**

Much like people horses will over consume feed and can make themselves sick from colic or laminitis. It may be appropriate to restrict access to new pasture growth that may be particularly lush. In group feeding situations the feed should be spaced out to prevent one dominant animal from scaring the rest away. Even with feed spread the handler must be sure that some animals are not quickly consuming their meals and their neighbors as well.