

Feeding the Winners -- Nutrition for Performance Horses

High-level performance horses can be the most difficult group of horses to feed because of the different types of horses and the different types of events. Winning is a combination of genetics, nutrition, training, skill and sometimes a touch of good fortune. Producing consistent, winning performances requires that the horse be at its best at the right time. In events where the difference between winning and losing is measured in hundredths of a second or fractions of a point, proper nutrition can be the key difference.

There are several areas of nutrition that are hot right now for potentially improving the performance of horses. The following is a summary of some of the ingredients or nutrients that may make a difference:

■ High fat or added fat feeds

The benefits of high fat feeds are being well accepted. High fat feeds may improve endurance, reduce the risk of certain types of metabolic problems, provide energy while having a calming effect on the horse, and reduce the heat load on a horse during hot weather. Vegetable sources such as corn oil, soy oil, canola oil and high fat rice bran are preferred by most owners. Animal fat can be used, but may be less palatable. Extremely high levels of fat (greater than 15% of the total diet) may have some adverse effect on performance. It requires a minimum of about 2 weeks on a high fat diet to get maximum benefit. A total of 5% - 7% fat in the grain portion of the ration produces desirable results. Additional oil or fat can be added to a maximum of 10% of diet.

■ Energy

There are many comparisons made about the energy levels of feeds, particularly when high fat feeds or highly digestible fiber sources are used. Digestible energy (DE) measured in kilocalories or megacalories is becoming more widely used to compare feeds. Unfortunately there is not a very uniform way of calculating DE between feed companies, so it's important to find out what is being measured. Energy can come from fiber, fat, starch and protein. As we feed performance horses, we try to maximize the energy from high quality fiber and from the appropriate level of fat. Protein is an inefficient energy source. Starch overloads can be the source of digestive problems.

■ Lower protein levels

There is very good research and good practical experience to suggest that lower protein levels with proper amino acid balance may improve performance, as it limits the excess nitrogen produced when extra protein is used as an energy source. The first limiting amino acids are lysine, methionine, and threonine. Methionine is being recognized as crucial to hoof quality and hair coat. Most performance-oriented horses are going to be fed, depending on the forage or roughage source, a 14% or 12% protein feed with specified lysine and methionine levels. As we learn more about amino acid requirements, total protein fed may be reduced.

■ Minerals

Calcium, phosphorus, copper, zinc and other trace minerals have received a lot of attention in recent years, particularly in the area of bone growth. There is some evidence that mineral levels in forages may be lower than book values. Phosphorus levels are getting more attention in young horses. Potassium has also gained attention, particularly with HYPP horses. General suggestions are to avoid alfalfa and high molasses feeds.

There are many different opinions on electrolytes. Sodium and chloride from salt are at the top of the list, with potassium and magnesium being included. Event, endurance and race horses are going to require the most careful management.

Selenium is definitely of interest to performance horse owners, as it may be useful in the prevention of many exercise-related problems (tying-up syndrome, etc.). According to the FDA, the maximum amount of selenium allowed in the total diet is 0.3 ppm. Many manufactured feeds are 0.4-0.6 ppm, so when fed as directed with hay, the amount will be at the appropriate level. There are many supplements available with higher levels, so directions should be followed.

Chromium is getting some attention in the performance horse world. Unfortunately it is not currently approved as an additive for commercial horse feed. At this time, the only approved use is for swine feeds.

■ **Vitamins**

As always, vitamins command attention from horse owners. Perhaps the most productive right now are vitamin E and biotin. Vitamin E recommendations have increased over the last couple of years, with antioxidant benefits being the most prominent cited. A total of 1,000 IU of vitamin E per head per day is a common suggestion, and some people are using 2,000 IU per day if horses are prone to muscle or fatigue-related problems. There is no problem with toxicity with E at practical levels of feeding.

Biotin is being widely used for hoof and hair growth and quality. Approximately 1-2 mg per head per day is the considered maintenance level, with 15 mg per head per day being considered for therapeutic levels. Best results are attained when used with adequate sulfur-bearing amino acids, particularly methionine.

Vitamin C (ascorbic acid) is present in more horse feeds, particularly senior horse feeds. It may also be beneficial for stressed horses. Vitamin A and D levels should be monitored, as it is possible to produce toxic levels.

■ **Probiotics**

Many probiotics products are on the market and in feeds, primarily yeasts and Lactobacillus. These products may improve fiber digestion and maintain appetite, and are a source of B vitamins.

■ **Nutraceutical products**

Many nutraceutical products are on the market with various health claims, with more on the way. Some of the research has been very limited and is based on claims and anecdotal evidence. However, these products may work on some horses.

Like many things in the horse industry, success can be a matter of doing simple things very well. Providing a balanced diet from high quality feeds which provide adequate water, energy, protein, minerals and vitamins is still the best base upon which to build the winning equine athlete.

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