Questions & Answers

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Q There is a bewildering array of supplements on the market. Can you help me make sense of all the choices?

A Sorting through the numerous supplements displayed on the shelves of your local feed store or in the pages of your favorite horse magazine can be difficult. As an equine nutritionist, it is sometimes difficult for me to figure out the intended purpose of certain supplements. However, supplements can be divided into two broad categories.

The first category is nutrient supplements. A nutrient is a substance that is required in a horse's diet. Nutrients that are typically supplemented include protein, vitamins and minerals. Protein is unquestionably an important component of the horse's diet; however, most mature horses on high quality grass hay, and certainly on high quality alfalfa hay, are getting plenty of protein in the diet. While heavy exercise, pregnancy and lactation do increase the requirement for protein in the mature horse, sufficient protein will probably be supplied with feed that is given to meet the increased energy required by these horses. If the supplement does contain some protein or amino acids, it will not hurt a mature horse.

Vitamin and mineral supplementation is very common in horse diets. Many of these vitamins and minerals are necessary to balance regional nutrient deficiencies in hay or pasture. Oversupplementation of vitamins and minerals can be harmful. Care should be taken when supplementing vitamin A or D and the minerals selenium and iodine. Oversupplementation can cause toxicity problems including death. Supplementation of B vitamins is not dangerous, just expensive. Common B vitamins supplemented to performance horses include biotin, thiamin, vitamin B_{12} and folic acid. Common minerals supplemented to performance horses include calcium, phosphorus, sodium, chloride, copper, and zinc.

The second category of supplements is nutraceuticals. The term nutraceutical combines the word "nutrient" (a nourishing food or food component) with "pharmaceutical" (a medical drug). These are substances sold under the premise of being dietary supplements, but for the expressed intent of treatment or prevention of disease.

Nutraceuticals are being used as alternatives for both nutrition and medicine. A substantial number of these products make "drug" claims without any data to support the safety or the ability of the product to perform the intended task. Nutraceuticals will eventually fall under supervision of the federal government; meanwhile, nutraceutical manufacturers continue to prey on gullible horse owners. The following is a brief list of some nutraceuticals being used in the horse industry:

- Carnitine - currently being studied
- Coenzyme Q10 - not enough data
- Creatine - no improvement in performance
- DMG (Dimethylglycine) - inconclusive results
- HMB (ß-hydroxy-ß-methylbutyrate) - currently being studied
- MSM (Methylsulfonylmethane) - no scientific benefit

With the multitude of supplements available, common sense seems to be the logical approach to deciding what is right for your horse. Logical thinking dictates performance horses undergoing the stress of training and competition will need some supplementation. Nutrient supplements are a good first choice; however, oversupplementation can be as bad as, or worse than, no supplementation. As a rule, if you plan to feed a supplement stick with a single well-balanced supplement. With regard to nutraceuticals, if they seem to be making claims that are too good to be true, chances are they will not live up to the claims.

Q I have been told that dairy quality alfalfa (>20% protein, <30% ADF) is too "hot" for my horse and will cause him to sweat excessively when he is exercised. What are your thoughts on this? Does this type of hay contain enough fiber to meet his needs?

A The term "dairy quality alfalfa" is used to describe alfalfa hay that is high in protein and low in fiber. These are desirable traits in hay intended for dairy cattle because it provides nutrients essential for milk production. Unfortunately, this is not the best hay for performance horses. In general, mature performance horses require a diet

that is between 8% and 10% protein. Feeding dairy quality alfalfa hay will provide more than twice the recommended amount of protein in the diet. Excess protein in the diet can be utilized for energy during exercise. The utilization of protein for energy produces three to six times more heat than the utilization of carbohydrates or fats. This can contribute to excessive sweating and heat exhaustion in performance horses, particularly in warm environments. In addition to being energetically inefficient, high protein diets will also increase the horse's water requirement. This water is utilized to flush excess nitrogen associated with protein metabolism from the system. Therefore, a diet of dairy quality alfalfa hay is not the best choice for performance horses since it will increase heat and water requirements, two things that any performance horse can do without.

Does dairy quality alfalfa hay contain enough fiber? This is a more complicated question as it depends on how much total hay the horse is eating. For example, if you have an easy keeping horse (1000 lbs.) that is being limit fed alfalfa less than 15 pounds of hay per day, it is certainly possible for this horse to be fiber deficient. Horses are good about letting their owners know they are fiber deficient since they will seek other sources of fiber. Unfortunately, their alternative fiber sources often include wood fence materials, stall fronts or trees. On the other hand, if you are feeding alfalfa hay free choice (greater than 25 punds of hay per day) this horse will typically be getting enough fiber in the diet and will not seek out alternative fiber sources.

Q

I want to keep my horse fit, but I don't get to ride as often as I would like and I don't want him "high" and "crazy" from too much feed and not enough exercise. What do you recommend?

A

Being able to control the mood of a horse through changes in nutrition is still being investigated in the scientific community. The key to successfully feeding your horse is to remember that horses are anatomically designed to digest fiber (hay and/or grass). Therefore, a horse's diet should maximize the amount of fiber. By maximizing the amount of fiber in the diet, horsemen can decrease the amount of simple carbohydrates (sugar) the horse is eating. The best hay source for providing plenty of fiber without much sugar is grass hay. If the horse is unable to maintain body weight on a straight grass hay diet, grain, fortified with vitamins and minerals, can be added gradually to satisfy his energy requirements. Any grain fed should be divided into at least two feedings per day. The addition of fat (vegetable oil or rice bran) to the diet is also a proven way to provide non-sugar calories to horses.

Q

My team roping partner and I have a bet over how much water a horse needs. Can you help?

A

The water requirement of a performance horse is dependent on the amount of feed eaten, the environmental temperature and the amount of exercise the horse is performing.

Water intake is closely regulated by the amount of dry feed the horse eats. A good rule of thumb is 1.5 quarts of water per pound of dry feed. A performance horse will eat about 25 pounds of feed per day. This gives a water requirement of approximately 9 gallons.

As environmental temperature increases, the amount of water required increases. The increased water is necessary to replace sweat loss associated with keeping the horse cool. A temperature of 100 degrees Fahrenheit increases water requirements to approximately 20 gallons per day. Exercising a horse in hot weather further increases the water requirement. Depending on exercise intensity (sweat loss), the water intake can increase more than 300% above a horse resting in a cool environment. The total water requirement is now 25-30 gallons per day.

If horses are not provided with adequate water, performance will decrease dramatically. Even mild dehydration will cause a decreased tolerance to exercise. Performance horses should be given the opportunity to drink before, during and following recovery from exercise.

Have a Question You Would Like To Ask?

The staff of Kentucky Equine Research welcomes questions and will be happy to answer any you may wish to ask. Simply mail your inquiry to:

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