

AAEP Workshop Focuses on Equine Nutrition

At the 2008 convention of the American Association of Equine Practitioners, horse owners were allowed to attend a seminar on the subject of equine nutrition. Information presented at the workshop was summarized by Christy West in "2008 AAEP Convention Wrap-Up," a supplement to *The Horse*. West, an editorial staff member for *The Horse*, reported that the workshop identified nine keys to understanding horse nutrition. Keeping these points in mind should help horse owners work out the best feed management plan for their horses.

First, forage is the foundation of a healthy equine diet. Fresh grass is the most natural type of food for horses, and its dried form, grass hay, is equally valuable. Constant access to grazing is the natural pattern, but it is not ideal for today's horses in every case. Metabolic imbalances keep some horses from correctly processing, absorbing, and storing nutrients, and these animals are not able to have unrestricted hay or grass. For healthy horses with normal metabolisms, a horse should eat a minimum of 1% of its body weight in forage every day, and that amount should be broken up into as many small meals as possible.

Second, forage, while extremely important to horses, usually does not contain a level of energy, vitamins, and minerals sufficient to maintain optimum health in horses that are asked to do more than a very small amount of work. Each horse's needs will be somewhat different depending on training, age, size, general condition, and whether the horse has a tendency to gain, lose, or maintain weight. Various feed products and supplements have been developed to complete the nutrition package that begins with forage. Fortified grain mixes may be formulated to contain added vitamins and minerals; special vitamin/mineral supplements may be fed alone or with grain; and complete feeds are available that include forage, grain, and nutrient fortification. Consult package directions or an equine nutritionist for information about how much to feed.

Third, it's tricky to supply your horse with exactly what he needs. Horses on restricted feed to prevent weight gain may not get enough nutrients, while other horses like those in race training are stuffed with so much energy-boosting grain that they eat far more of some nutrients than they need. These large grain meals can contribute to gastric irritation, hindgut acidosis, colic, laminitis, or the severe muscle cramping known as tying-up.

Fourth, answers can be found in the recently revised edition of *Nutrient Requirements of Horses* compiled by the National Research Council. This volume is the last word on exactly what is needed by horses of all types classified by age, use, metabolic rate, and health condition. The book includes guidelines for water, protein, energy, vitamins, and minerals, as well as general feeding and management tips.

Fifth, an understanding of the equine digestive tract is helpful in comprehending why horses must be fed differently than dogs, cats, sheep, or cattle. Horses have small stomachs for their body size, and overfilling the stomach is a recipe for disaster. Providing frequent small meals is a much safer plan than allowing a horse to gorge on unlimited feed. The horse is not a ruminant (does not chew cud like a cow). Instead, dietary forage travels to the capacious large intestine where it ferments with the aid of billions of specialized microorganisms. An important byproduct of fermentation is heat, and sufficient forage is a major factor in producing and maintaining body heat in cold winter climates.

Sixth, horses need to ingest a variety of substances besides forage for optimal health. Water is possibly the most important, making up between 70 and 75% of the horses' body. Water is essential for many metabolic functions as well as for body temperature control. Horses should always have access to plenty of clean, fresh water, and will drink an average of 5 to 15 gallons each day. For tissue repair and rebuilding, horses need protein throughout their lives. Some types of protein can be synthesized in the horse's body, while others such as lysine must be supplied by the diet. The carbohydrates in grains are an important energy supply. While only a small amount of fat is actually required in the equine diet, supplementing with fat is a method of supplying extra calories to underweight or hard-working horses. A correct balance of omega-3 and omega-6 fatty acids is important in reducing inflammation and supporting the immune system. Vitamins and minerals are necessary to support every body system. The absolute amount of each vitamin and mineral is important, as is the dietary ratio of some minerals to others. The formulation of top-of-the-line commercial feeds can be trusted to provide horses with the nutrients they need (except for water, which should always be available) when the feed product is fed at the recommended rate.

Seventh, though all horses eat similar things (grass, hay, grain products), each horse will have specific needs, and therefore each should be considered as a unique individual with a feeding program designed just for him. Arriving at this regimen takes time and attention to detail. Factors such as the horse's age, exercise schedule, size, breed, health status, and metabolic rate must be taken into consideration. Other things like travel stress, weather, availability of shelter, and unusual activity (stallion in breeding season, broodmare with foal, horse entering race training) should also be evaluated. After an owner begins a feed management plan for his animal, the horse's energy level and weight should be monitored on a regular basis. The diet can be adjusted if the horse's body condition shifts to an undesirable state.

Eighth, determining a horse's weight and body condition should be done with the same regularity as other health routine tasks like deworming, hoof care, and vaccinations. At least every couple of months, and more often if there is a concern, owners should use a scale or weight tape to record weight. Body condition (amount and location of muscle and fat) should be recorded as well. The effects of diet, disease, stress, and work schedule may be seen as weight gains or losses that can most easily be corrected before the changes become extreme. While an equine scale gives the most precise information, regular use of a weight tape can indicate trends in weight change even though an absolute weight may not be known. This information is just as important as having a solid number. To determine body condition, owners need to consult a condition score chart. Various versions are available (download a free chart at TheHorse.com/pdf/nutrition/bcs-poster.pdf) and a hands-on examination can help an owner match his equine to the description of each condition level. If undesirable changes are seen, owners should ask a veterinarian or equine nutritionist to suggest modifications to the feeding program.

Ninth, a number of excellent resources exist to help horse owners determine the diet that will meet their horses' nutritional requirements. Books, magazines, and Web sites (TheHorse.com, www.ker.com, many others) are available. With the overload of information to access, it's easy to get confused or to find advice that isn't backed by solid nutrition principles. Checking with a veterinarian, equine nutritionist, or reputable feed dealer will often lead to the best feed management plan, and if necessary, gradual changes can be made to maintain a horse's optimum health.