

Top Ten Challenges for the Future in Horse Nutrition

Doyle G. Meadows
Professor, Animal Science
University of Tennessee
Nashville, TN

Horse nutrition, as a science, is relatively new when compared to other species of livestock. Horses are individuals and should be fed and managed to complement their age, stage of production and work level. There is a definite scientific basis to feeding horses; however, feeding horses is not only a science, but also an art.

Good managers learn normal eating habits for a given horse and, with daily observation, quickly detect abnormalities in feeding behavior. Feeding problems can be determined and adjustments made to prevent reduced performance or productivity. Proper feeding management is a comprehensive program that involves understanding the horse's digestive system, knowing the nutrient requirements for horses and the feeds available to meet those nutrient demands, combined with common sense feeding principles.

Weighing in at number 10 is the need for continued and increased emphasis in scientific research and investigation. The number of Ph.D. candidates involved in horse nutrition has declined in recent years. Although overall horse research continues to be strong at major land grant universities, those involved in nutritional investigations are relatively low. However, major feed companies and cooperatives continue to report data important to the horse nutrition body of knowledge. Many cooperatives have combined resources in an effort to obtain data and improve product quality.

Number 9 is the significant effort to increase the nutritional wisdom of those providing feeding recommendations to the horse-owning public. This group would include, but not limited to, animal science professionals, veterinarians and retail employees. Both Animal Science Departments and Colleges of Veterinarian Medicine have relaxed the quality and quantity of nutrition courses required for graduation. Many time retail store employees are forced to give horse nutrition recommendations without the understanding of nutritional concepts. Today, many of the veterinary students are not from rural backgrounds and have limited experience in feeding livestock. This combined with decreased formal training in nutrition has a detrimental affect on the amount of quality information presented in both the scientific area, as well as, common sense feeding management practices.

Number 8 is "fad" diets. A tremendous amount of information is generated on the Internet and print media that expounds the significance of a product or feeding program. For example, many horse owners are incorporating fat into diets of horses at maintenance. Generally, the added fat is not needed and only increases body condition score to horses already too fat. Likewise, "low carbohydrate" diets are receiving

increased attention and the diagnosis of “diabetic” horses has soared. Is this a real or perceived problem in horses? Regardless of the answer, the situation exists. Although protein requirements of most horses is easily met, decreased quantity of higher fat feed may meet energy needs, but may not allow protein requirement to be met.

An attempt has been made to provide more consumer confidence of the product in the feedbag. Horse owners spend millions of dollars annually on unwarranted and unnecessary supplemental feeds, and this is number 7. Many of the supplemental products fed do not help the horse, but makes the owner feel warm and fuzzy. In reality, a well-balanced feed in a bag can lose its integrity with the addition of other grains and products. The more confidence horse owners have in the feed products available, the less money will be wasted with the purchase of supplements. Many of the companies oversell the value of a product and expensive packaging is passed on to the horse owner. Horse owners have come to believe that a “plain, brown bag” of horse feed cannot be good enough for their horse.

The 6th ranked nutrition challenge of the future is the utilization and understanding of alternative feedstuffs. The entire concept of the use of by-product feeds, distiller grains and a whole host of alternative (non-traditional) feeds and forages. During drought times, scientists and horse owners have realized that many feedstuffs typically categorized as cattle feed or hog feed or chicken feed could be used to meet the nutrient needs of horses provided the feeds were processed correctly and fed in the correct amount. The investigation of alternative feeds is paramount. Additionally, there is a concern with high grain prices that horse owners will sacrifice quality and opt for a less expensive feed. Perhaps a less-expensive feed produced with alternative feeds can maintain price and quality.

Moving along, the 5th most significant challenge in horse nutrition is feeding horses by class and stage of production. It is mandatory that horse owners feed specific classes of horses to meet those nutrient needs only. Horse diets should be based on scientific fact and research and not mixed according to fiction, fable and folklore. The pregnant mare should be fed differently than the open mare and the young growing horse fed differently than the performance horse. All are individuals and should be fed differently, class by class.

Coming in 4th on the list is feeding management and common sense feeding principles. This is currently, and will remain to be a major challenge in the area of horse nutrition. Feeding management is a key to reduced colic and other digestive disturbances. Horses can and should be fed scientifically to meet their nutrient needs, but equally important, horses must be maintained on a program of common sense feeding management practices. Feeding management can cover a multitude of things such as feeding by weight, not by volume, regular feeding intervals, feeding schedules that relate to a certain work schedule, individual feeding, etc.

Continuing in the top ten, the 3rd most significant challenge in horse nutrition is forage and hay production and marketing. The horse industry is in a transition in the way

hay is purchased and marketed. The effort to sell high-quality large round (square) bales to horse owners by weight and nutrient analysis has increased dramatically and will continue in that direction. Hay producers are realizing that horse owners will pay higher prices than most livestock producers and owners. Consequently, marketing strategies are being developed by hay producers. A false concept in the mind of horse owners suggests that round bales of hay are low quality and should be fed to cattle and small square bales are higher in quality and are produced for horses. Neither of these examples is true. There is a tremendous amount of high quality forage suitable for horses baled in large round bales and some extremely low quality forage is baled in small square bales. Analyses and weight are the primary keys to the purchase and production of hay.

The 2nd most challenging area of horse nutrition is the education of non-agricultural horse owners. In the past 20 years, the number of urban and non-agricultural horse owners has increased dramatically, and with this parameter, increased opportunity exists for those involved in the education business. Many new horse owners will not know the difference between a bale of hay and a flake of hay. Many of these new owners want to learn more about horse nutrition but are overwhelmed with an information overload. They will understand some parts of the puzzle, but will miss the practical principles and concepts of horse nutritional programs. They have no idea on how to feed horses although they were well educated in other businesses. They read and educate themselves and “go off the deep end.” The horses are individuals and still have to be fed and managed as such – not like engineering principles where one size fits all. Professional educators should not kid themselves about the lack of nutritional wisdom of horse owners.

Here it is!! The number 1 challenge of horse nutrition is concept to maximize nutrient intake with pasture or hay and supplement with a mixed grain diet. Horses are non-ruminant herbivores and have the great ability to utilize forages. Horse owners are extremely concerned about the grain mixture being fed to their horses and rarely pay attention to the quality of their forage or hay. It is a real challenge to get horse owners to understand that most non-productive horses can survive on good quality forage along. Young growing horses, performance horses and lactating horses can be supplemented with grain diets to meet their nutrient demand. Prior to feeding grain, the horses’ nutrient requirement should be maximized with forage. As soluble carbohydrates are increased, the potential for colic, and subsequent laminitis is also increased.

There you have it! Ten important concerns in the future of horse nutrition. Are these 10 the most important – maybe! Are these the only concerns – absolutely not. It is impossible to list only 10 challenging areas of horse nutrition. The economic impact of horses in certain areas has warranted an increase in scientific research. Horses are a valuable commodity and horse owners are searching for better and more economical means of feeding horses without reducing performance. Feeding horses to meet nutrient needs will help achieve that goal.