

# Kentucky Equine Research Conference Features Recent Advances in Equine Nutrition

The eighth annual Equine Nutrition Conference hosted by Kentucky Equine Research (KER) was held in Lexington, Kentucky April 27-28. Over 200 horsemen, veterinarians, researchers, and feed manufacturers from around the world attended lectures that focused on recent advances in equine nutrition. Veterinarians and graduate students from the Universities of Florida and Kentucky and Michigan State University had the opportunity to present some of their ongoing and recently completed research. Drs. Joe D. Pagan, Stephen Duren, and Kathleen Crandell of KER as well as Dr. David Kronfeld from Virginia Polytechnic Institute, Dr. Keith C. Behnke from Kansas State University, Dr. Bob Coleman who is a past president of the Equine Nutrition and Physiology Society, and Dr. David M. Caldwell of Westway Trading Corporation also supplied reviews of their most current research.

Topics covered a wide range of equine nutritional issues from the influence of housing young horses on bone growth to Dr. Crandell's talk on the use of nutraceuticals. Her presentation sparked a lively debate about the legal ramifications facing producers and marketers of the sometimes-controversial products. According to Dr. Crandell there is room for argument regarding the actual definition of nutraceuticals as they fall "somewhere between a food and a drug." To avoid problems with the Food and Drug Administration (FDA), labeling must be carefully worded to avoid any suggestion of a medical benefit or performance enhancement derived from the administration of the product. So long as the FDA is not involved, expensive and time-consuming research that would greatly inflate the cost of the products is unnecessary. Dr. Crandell concluded, "Because of the lack of regulation for these products, horse owners themselves become the researchers and their beloved horses the subjects in their own fact-finding missions on the truth and efficacy of the nutraceutical."

Dr. Pagan presented information on a number of research projects KER has done in conjunction with the Waltham Centre for Pet Nutrition that involve diet and exercise. One concerned the timing and amount of forage and grain fed to six Thoroughbred horses and its effect on their exercise response. He said the study suggested that "an overnight fast before an extended bout of exercise may be beneficial." He also presented a

talk on factors affecting mineral digestibility in horses with information gleaned from over 30 studies done by KER.

Dr. Edgar A. Ott of the University of Florida in Gainesville outlined the research currently underway at the University. He reviewed research done on the influence of dietary fat and time of hay feeding on the growth and development of yearling horses that indicated fat supplementation in the equine diet reduced mean plasma insulin. He also reported on two other studies done by the University, one on the influence of chromium picolinate on growth and energy metabolism in horses and another that examined the use of extruded complete feeds in mares.

Highlights of the University of Kentucky program were presented by Dr. Laurie Lawrence who discussed the results of three recent studies.



*An international group of feed dealers and researchers enjoy an evening banquet at Kentucky Equine Research's new executive office.*

Research done to determine the effect of level and type of dietary fiber on hydration status following dehydration with furosemide concluded that a diet high in soluble dietary fiber may provide the horse with a source of dispensable water in the hindgut during dehydration. The other two studies from the University of Kentucky involved evaluating the metabolic effects of warm-up on exercising horses and the effect of long-term diet restriction on thyroxine and triiodothyronine concentrations and metabolic responses in horses fed and fasted prior to exercise.

Dr. Brian D. Nielsen from Michigan State University discussed the rapid growth experienced by the agriculture program at MSU that has allowed for the establishment of an equine research program. He presented information about eight different ongoing research projects including four projects dealing with the effects of keeping young horses in stalls as opposed to in pastures. These studies focused on bone growth, cartilage metabolism, and behavior.

Dr. Duren presented research done on gastric ulcers that found this condition to be a common problem in performance horses. He cited among other examples a postmortem study done in Hong Kong in the mid-1980's on 195 Thoroughbred race horses that indicated 80% of these individuals in active training had gastric ulcers. Citing another intensive study proposing that the major cause of these ulcers in horses is prolonged exposure of the squamous mucosa

to gastric acid, Dr. Duren postulated that, as this area of the digestive tract does not have a mucous layer, it relies upon saliva to buffer the gastric acid. If adequate saliva is not produced, gastric irritation and lesions may develop. Kentucky Equine Research spent three years developing an equine antacid that would be easy to administer, require small doses to neutralize acid and coat the

mucosa protecting it from irritation, and adsorb substances that could damage the mucosa while at the same time creating no harmful side effects. Neigh-Lox, the product Dr. Pagan and the team of researchers at KER developed, has subsequently been field tested in hundreds of horses and proven itself to be effective. Dr. Duren finished his presentation with the suggestion that "Neigh-Lox's most important role, however, may be in preventing ulcers from occurring in the first place. Antacid therapy along with a dietary program that emphasizes continual forage consumption may greatly reduce the incidence of gastric ulcers in performance horses and foals."

Dr. Kronfeld gave an in-depth presentation on sensitivity analysis, in which he maintained that "this method tests the flexibility and robustness of the design of a diet supplement, and greatly increases the probability of detecting a weakness in a ration." Dr. Behnke discussed current issues and challenges facing feed manufacturers that focused on feed nutrient uniformity and grain parti-

cle size and their effects on animal performance as well as pellet quality issues. Dr. Coleman discussed the advantages and disadvantages of processing grain, and Dr. Caldwell presented an analysis of molasses in feeds.

One of the latest innovations brought out at the seminar was the introduction of a new research tool, the searchable compact disk (CD). Dr. Pagan announced the recent compilation of six years of equine research presented at KER annual seminars. The book form of this compilation, *Advances in Equine Nutrition*, is also on CD. According to Dr. Pagan, "The advantages of this new technology will revolutionize how we store and access data." The CD allows for a complete and speedy search by author's name, article title, or key word. By typing in key words such as chromium or developmental orthopedic disease, a reader can find every mention of the word or topic

in the book. A list will then appear displaying a pie chart that indicates, by degree, the percentage of times the word or phrase appears in the article.

People attending the research seminar were invited to attend the Rolex Kentucky Three-Day Event which directly preceded the conference. KER was one of the corporate sponsors of the event that saw the first ever CCI\*\*\*\*



*Gaylon Roberts, Billy Fryer, Janet Glowaky, Jason Chastain, Nata Porter, and Novella Coppedge at the Kentucky Equine Research Tent at the Rolex Kentucky Three-Day Event*

competition outside of Great Britain. At the close of the competition, KER hosted a barbecue cookout for its national and international team members at its new office facility. Over 150 people were on hand to enjoy the music of Jim Pagan and Jai Lambert while enjoying touring the new site and seeing the results of the annual feed products competition. Eighteen national companies and 11 international companies submitted 91 samples of feed in three categories: sweet feeds, pelleted feeds, and specialty feeds. Five panelists (three Ph.D. equine nutritionists, a feed manufacturer, and a horse owner) were asked to evaluate and score the samples.

Plans are underway for the 1999 KER Nutrition Conference, which will be held again directly following the Rolex Three-Day Event. The Rolex begins April 22 and concludes on the 25 and the Seminar will be held April 26 and 27. For more information and to secure a reservation, please contact Bonnie Harris at 606-873-1988. ☺