Unless you studied equine science in school, you may be lacking in knowledge of equine nutrition, especially as it pertains to feeding the dressage horse. Perhaps that’s why two sessions on related topics drew sizable audiences at the 2014 Adequan/USDF National Convention in Cambridge, MA, last December. Here are highlights of the presentations.

In his session, entitled “Performance-Horse Nutrition,” Donald R. Kapper, director of nutrition and technical services for Progressive Nutrition and consultant to Cargill Animal Nutrition (Nutrena), addressed what he described as “maintaining optimal gut function and replacing the nutrients used up during exercises—how, why, and when.”

Kapper started with the core of the equine diet: forage. Hay, pasture, or a combination of the two should constitute 50 to 90 percent of the mature horse’s total diet—the higher the percentage, the better, he said. His formula for calculating the required daily forage need: Feed 2 percent of the horse’s body weight in forage per day. Three examples, including concentrate (grain) maximums:

- A 1,000-pound horse would therefore need 20 to 25 pounds of forage per day, with a maximum of 10 pounds of grain or other concentrates
- For a 1,250-pound horse, 25 to 30 pounds of forage per day, plus a maximum of 12.5 pounds of grain
- For a 1,500-pound horse, 30 to 35 pounds of hay per day, plus a maximum of 15 pounds of grain.

Forage should be of good quality. A rotund “hay belly” is caused by consuming overly mature hay, Kapper said. And skimping on hay quality is false economy: “Hay quality makes a huge difference in the cost of a feeding program,” he said.

**Forage and a healthy gut.** Ample forage has benefits that go beyond the strictly nutritional, according to Kapper, who called nutrition “the science of prevention.”
“Horses do not salivate in anticipation of eating like we do. They salivate only on molar pressure [which happens when they chew]. A horse fed free-choice forage will produce 20 to 30 gallons of saliva per day per thousand pounds of body weight.”

Saliva production is important because “saliva helps maintain normal gut function,” Kapper said. “It contains enzymes and lubes the digestive system. It is the best buffer to stabilize intestinal pH, which helps to keep ulcers in check and also helps to prevent intestinal twists and torsions.”

Finally, as most horse owners know, “Forage reduces boredom and vices,” said Kapper.

Laura Marie Kramer, director of northeast sales for the Idaho-based Standlee Premium Western Forage, reinforced Kapper’s message in her presentation, “The Importance of Premium Forage in the Horse’s Diet.”

“The equine stomach produces acid constantly, not just when they eat,” Kramer said. “When the horse is not eating, it’s not producing saliva, which buffers acid.” Forage consumption produces more saliva than grain consumption, she said.

By now, most horse owners have heard that ulcers are common: present in 90 percent of racehorses and 60 percent of non-racers, according to Kramer, but rare in pasture-kept equines.

So forage, according to the presenters, really is a magic bullet—but some forage is superior to others, Kramer said.

“Alfalfa hay is a dietary acid reducer because it’s high in calcium—like Tums for a horse,” she said. For the ulcer-prone horse, she recommended feeding “a few handfuls of alfalfa pellets” (soaked if the horse tends to bolt his food) 30 minutes before exercise (because exercise splashes stomach acids around), and feeding alfalfa hay to the stalled horse at night because the overnight hours are the longest the horse will go between feedings. Especially for the overweight horse, use of a slow feeder can be helpful because it prolongs “chew time,” she added.

Naturally, Kramer touted the benefits of her company’s Western forage. Not only is pasture a variable and unreliable source of forage, but Western-grown forage is superior to the Eastern varieties because of the way it is grown: in dry climates under irrigation, resulting in bright-colored forage that is free of dust, mold, and foreign materials, she said.

“Eastern-grown timothy can have a sugar level of over 20 percent, which is important if the horse is carb-sensitive;” Kramer added.

**Evaluating body condition.** Your veterinarian, equine-nutrition expert, or extension service should be able to provide you with a copy of the standardized Body Condition Score (BCS) assessment instrument, which is used to evaluate a horse’s weight on a scale of 1 (extremely emaciated) to 9 (extremely fat). According to Kapper, the ideal for a dressage horse is 5 or 6. A BCS of 7 or above indicates that the horse has areas of patchy fat—a red flag, he said.

“Patchy fat produces cortisol, which can lead to founder,” he said. “You must decrease the calories and increase the horse’s workload or you’ll have problems in the future.”

Less well known than the BCS but also important is the Topline Evaluation Score (TES) instrument, in which the horse’s topline muscling is given a grade from A to D.

“A’ is ideal,” Kapper said, with a full and well-rounded topline, loin, and croup. A “B” grade indicates “the beginning signs of protein or amino-acid deficiency. Muscle loss is easiest to see on the topline. It begins in the back area and moves through the loin and croup, down through the hindquarters. Grades C and D refer to increasingly concave (sunken) toplines and muscle atrophy, he said.

It is possible to see a horse with a BSC of 5 yet a TES of C, according to Kapper. “You can have a horse with fat patches and still very emaciated over its topline.”

**The role of amino acids (proteins).** “Muscle is 73 percent amino acids on a dry-matter basis,” said Kapper. (Muscle is 70 percent water.)

According to Kapper, a study of muscle measurements of the equine loin showed that the longissimus dorsi muscle (the long back muscle) increased in size by an average of 19 percent when the maintenance level of all essential amino acids were fed every day.

All essential amino acids must be fed in sufficient amounts, Kapper said: “If one is deficient and the others are sufficient, all of the amino acids will be used only at the level of the deficient one. Usually tryptophan is the limiting amino acid.” Tryptophan will be listed on the feed label if it’s contained in the product, he said.

Another small but necessary component of muscle is phosphorus, which Kapper called “critical in proper metabolic function. It got removed from [many] commercial feeds because the cost of phosphorus increased. We are seeing phosphorus deficiencies when we haven’t seen them for years.”

“To support muscle function, administer the nutrients used up during work so the horse bounces back more quickly and performs at the same level the next day,” said Kapper, who advised feeding a high-performance equine athlete amino acids and electrolytes within 45 minutes after work. (And yes, Progressive Nutrition offers just such a line of products, including the protein supplement Top-Line Xtreme and the electrolyte Aqua-Aide.)