

Why can't feed manufacturers place starch content on labels, just as they do protein or certain minerals? I have a horse with equine metabolic syndrome, and this information would be useful when I am selecting a feed for him.

There is a movement afoot within the feed industry to mandate the labeling of the carbohydrate content of equine feeds, either as starch and sugar or as total nonstructural carbohydrate (NSC). Much of the rationale used to justify this revolves around the need to inform owners how to select a feed suitable for their horses with metabolic issues such as equine metabolic syndrome (EMS). However, reducing the focus of managing metabolic problems to a single nutrient risks trivializing the complexity of the syndromes.

Yes, the amount of starch and sugar in a feed affects a horse's glycemic response and a large influx of blood sugar stimulates insulin secretion, elements that exacerbate certain metabolic conditions, but there are several other factors that affect glycemic response that have little to do with the total carbohydrate content of the feed. Studies conducted at Kentucky Equine Research (KER) have shown that glycemic response is greatly affected by level and rate of intake. In one study, the addition of vegetable oil to a grain meal reduced glycemic response significantly, most likely by delaying gastric emptying.

The current conventional wisdom is that EMS horses should receive hays and feeds that contain 10% or less NSC. However, this is a fairly gross approximation since the quantity of NSC that an individual can tolerate is highly variable. Some scientists report that horses with severe EMS had high insulinemic responses even when fed a 10% NSC hay. In humans, there are a number of other dietary factors that affect insulin secretion including different types of protein and fat, and likely the same is true in horses.

In addition to NSC, an equally useful parameter to place on a feed tag would be an estimate of the feed's energy density. Although digestible energy (DE) cannot be measured directly, a reasonable estimate can be made using regression equations developed from multiple digestibility studies in horses. The NSC-to-energy ratio is much more relevant to dietary management of EMS than NSC alone.

Equine nutritionists have struggled for years to educate horse owners that a single nutrient value such as the percent protein in a feed is not the only factor that should be considered when selecting a feed for their horses. Instead, an appropriate feed should contain a balanced concentration of multiple nutrients to complement the forage in which the horse is being fed. The same philosophy should be applied to feeding and managing the EMS horse.

More research is needed to determine what other factors besides sugar and starch affect insulin response in horses. Most importantly, horse owners need to be educated about the danger of obesity in their horses and the benefits that even moderate exercise can provide.

If you would like to submit a nutrition question, please contact Eileen Phethean at [ephethean@ker.com](mailto:ephethean@ker.com) or mail to: EQUESTRIAN Nutrition Questions, c/o Kentucky Equine Research, 3910 Delaney Ferry Road, Versailles, KY 40383.