



MANAGEMENT

Sugar Content in Feed and Forage no. 1.818 Affects Horses' Health

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Quick Facts...

Carbohydrates/sugars play an important role in equine health.

Sugar and starch are absorbed in the upper intestine - fructan has to be fermented in the lower digestive tract (hindgut).

Feed can be tested for sugar levels. Consult a veterinarian or nutritional consultant to determine the right sugar levels for your horse.

Feed testing facilities can provide instructions on proper sampling and recommended procedures to send samples to the lab

Different environmental conditions raise the level of fructan in pasture grass

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There has been much written about sugar levels in feeds and forages because they play an important role in equine health. Some would describe low sugar feeds as “low-carbohydrate” feeds. Actually, there is no horse feed that is low in “carbs” because the fiber in forage/ hay is carbohydrate in nature. Fiber is made up of complex carbohydrates and the horse’s digestive system needs it to function properly. Feeds vary in sugar and starch content - the “high sugar feeds” can be detrimental to horses because they:

- disrupt normal digestion,
- exacerbate certain medical conditions, and
- lead to serious complications like colic and laminitis – two serious conditions that can strike any horse.

Carbohydrates can be classified into three categories: simple sugars, starches, and complex carbohydrates.

1. Simple sugars are a one-sugar unit that is readily and rapidly digested in the upper intestine.
2. Starches are a small group of sugar units connected together that quickly digest and absorb in the upper intestine.
3. Complex carbohydrates are made up of sugar units connected together that cannot be digested and absorbed from the upper intestinal tract. They must be fermented by bacteria and protozoa in the lower digestive tract or “hindgut.” (cecum, dorsal colon, and ventral colon).

One important complex carbohydrate in equine feeds is fructan. It is a non-structural carbohydrate (NSC), like simple sugars and starches, but is different than sugar and starch because it must be fermented in the hindgut like other “fiber-type” complex carbohydrates. Fermentation of fructan, other complex carbohydrates, and fiber involves a longer process than sugar and starch. It also requires a delicate balance of the proper population of microorganisms in the hindgut.

Fructan is commonly found in certain types of grasses and hays, and the content varies immensely. Fructan is a type of carbohydrate that plants accumulate and store for energy. It can be found in high levels in cool-season grasses and hay made from these grasses. Cool-season grasses like timothy, orchard grass, brome, and ryegrass predominate in horse pastures and hay fields.

Normal Digestive Physiology – It Takes “Guts” and the Right Kind of “Carbs”

Horses’ digestive physiology works best when the horse eats frequently and mostly on forage or hay. For most horses, little or no grain/concentrate is needed if they are on a good quality forage/hay. Yet because of the physical

