

Types of Hay—A Brief Summary



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A vast array of hays are commonly fed to horses in the United States, these include timothy, orchard, alfalfa, coastal, oat, fescue, clover, bermudagrass and rye, to name a few.

Hay falls into one of two categories: **legumes or grasses**. Commonly fed legume hays include alfalfa and clover. **Grasses are further categorized as cool-season or warm-season varieties**. Cool-season grasses include timothy, orchardgrass, ryegrass, meadow grass, Kentucky blue grass, smooth brome grass, tall fescue, and redtop. These grasses grow best where the summer season is not very hot. They may have a slightly higher sugar level than warm season grasses and are therefore preferred by horses because of their taste. **Warm-season grasses** include brome grass, bermudagrass and coastal bermuda. Coastal bermuda is more robust than most common bermuda grasses and is more resistant to foliage diseases, frost and drought. It generally produces more forage than common bermuda grass, especially at high fertility levels. Quality is generally similar to or slightly poorer than that of common bermuda grass if the two are fertilized alike and sampled at the same growth stage.

There are cereal grain hays as well, such as barley, oat, wheat or rye, which are also types of cool-season grasses. However, grain hays tend to be higher in starch & nitrates. While horses can tolerate nitrate levels up to 2 percent, it is safer to have the hay tested before being fed.

Legumes, such as alfalfa and red clover, are typically much higher in protein and calcium than grass hays. Legumes may also be higher in energy and total digestible nutrients. Red clover has a good nutrient profile, but it is sometimes affected by a mold that produces slaframine. Slaframine is a kind of alkaloid mycotoxin that generally causes salivation (slobbers) in horses. It is usually produced by the fungus *Rhizoctonia leguminicola*. It is a common fungal pathogen of red clover that causes black patch disease in the plant. Moldy hay from sweet clovers forms coumarin, which breaks down into dicoumarin which causes severe hemorrhaging. (Discovery of coumarin in sweet clover mold led to development of warfarin, used in rodent poisons, and an anti-coagulant used medically to treat blood clots.) Also, it has been observed that the porphyrins in clover can cause a horse's urine to have a reddish color.

Nutrient levels in all types of hay depend partly on soil and partly on when and how the hay was cut and cured. Hay cut when plants are mature tends to be less digestible and provides less nutrition than hay cut before plants reach that stage. Very early maturity hay often has a soft texture, is very leafy, and has a high nutrient density and palatability. Plants harvested in early maturity are cut soon after the seedheads emerge (grasses) or before the plant begins to bloom (legumes). Plants harvested in late maturity will have coarse, thick stems and less leaf than plants harvested in early maturity. The older the plant is at the time of harvest, the lower the nutrient value and the palatability.

While some varieties of grass hays, like bermuda grass as opposed to orchard grass tend to have to have lower sugar/starch levels, the bottom line is, that the level of sugar in the cutting is determined by the time of day it is cut.

The process of photosynthesis creates sugars in daylight hours.

During the night, the plant uses sugar sources for growth and other cellular functions.

The sugars don't instantly go down with the sun, but rather progressively during the dark hours, so that by earliest morning hours the sugar levels are the lowest, as the sun rises so do the sugar levels in the plant.

There are exceptions (isn't there always?), when the sugar is not converted during the night, as in a stress situation such as drought, excessive heat, or an overnight freeze. Then grasses will not convert the sugar they synthesized during the day into fiber for growth overnight, and the sugar levels can remain quite high in the morning.

So you see, assuming that your hay is low in sugar because of the type of hay it is can be misleading & gives owners with Insulin Resistant horses a false sense of security. Trust me when I tell you that I have seen bermuda hay analyses with extremely high sugar levels. The only way to be sure & safe is to have your hay analyzed.

References:

<http://www.uky.edu/Ag/AnimalSciences/pubs/id146.pdf>

<http://www.horsechannel.com/horse-health/all-about-hay-23205.aspx>

<http://www.discoverhorses.com/all-about-horses/all-about-hay/>

<http://earthnotes.tripod.com/cloverred.htm>

<http://www.thehorse.com/ViewArticle.aspx?ID=17618>

Claire C. Cox-Wilson of Shotgun Equine Nutrition (7/2012)

<http://www.shotgunranch.me/>