HOW TO CHOOSE HAY FOR HORSES

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CHARACTERISTICS TO DESCRIBE AND EVALUATE HAYS FOR HORSES

Characteristics that many horse owners and hay producers already use, as well as others that are important to consider but are not widely used yet, are provided in this article. Horse owners as well as hay producers often base opinions on recommendations developed from ruminants' research, which do not always apply to horses.

CONTENT. Percent and kind of grass and/or legumes in the hay.

Content affects protein. In general, legumes have higher protein content than grasses. Protein level of hay is also affected by stage of maturity at the time of cutting. Leaves are the main plant structure where protein is stored, and break easily from the hay, becoming a significant protein loss.

Often straight alfalfa hay has more protein than what the horse needs. Although this will not affect the horse's health, it will increase water requirements and cause more urination that is also high in ammonia. This means the protein is just being wasted.

On the other hand, young horses that are developing have higher protein requirements, and alfalfa hay is good for them. Alfalfa also provides essential amino acids such as lysine. Alfalfa has high levels of calcium and you need to make sure to give appropriate mineral supplementation (in this case, high in phosphorus). Strive to keep the calcium to phosphorus ratio between 1:1 and 3:1.

Content affects fiber. The fiber from grasses is more digestible than that of alfalfa and other legumes at the same stage of maturity.

Meaning to the horses. Horses have low requirements of protein that can be met fairly easy; on the other hand, the equine digestive system is extremely sensitive to having a constant input of digestible fiber. Therefore, it is more important to pay attention to amount of digestible fiber and energy content, rather than protein content of the hay.

How to determine content. Besides asking the producer, you can open a bale and analyze it. Legumes have round stems and round or oval leaflets that attach to the stem, individually or in groups. The leaves from grasses are long and narrow.

Other considerations. Some legumes are thick and hard to dry when making hay, and therefore are at higher risk of molding. Depending on how young the plant is at harvest, grass leaves stay longer "despite handling" of the bales and add softness to the hay.

STAGE. As forage plants mature, the nutritional value changes. They have more fiber that is less digestible, and the levels of available (digestible) energy and protein decrease. Indicators of maturity in the case of legumes are flowers, and well developed seed heads for grasses, as well as thick stems in both cases.

Stage affects type of fiber. "Hay bellies" develop when horses get fed forage that has too much lignified fiber and too little available energy. As plants mature, the amount of lignin in the cell wall increases, it will take longer for the bacteria and protozoa in the cecum to digest it and it will stay longer in the system causing big bellies.

Be cautious with spring pastures. Fructan is a structural carbohydrate that forms part of the cell wall but acts in a similar way as starch and can cause colic and other digestive problems. Lush spring pastures are very high in fructan and access to spring pastures needs to be limited, monitored and slowly increased to avoid these problems. Or, make sure that the horses have mature fiber in their system before letting them out to the lush pasture by giving them hay or access to an overgrown area that has old forage.

Meaning to the horse. Grasses harvested at early boot stage (when the seed head is just starting to form), have excellent fiber digestibility and energy availability, and will produce very leafy, soft hay that smells sweet. This hay is very appealing to the horse and provides excellent nutrition. Keep in mind that even grass cut at early mature stages makes hay that can meet the basic maintenance nutrient requirements of an adult horse. Furthermore, legumes even at very mature stages will still meet the nutritional requirements. The catch is that mature legume hay might not be soft enough for the horse to readily eat it.

What to look for in grass hay. Look for grass hay where you may not be able to see any of the seed heads or that are very small because they are just starting to develop. If you can see mature seed heads, the fiber content will have gone up, is less digestible, and the hay is coarser. Even so, if the hay is put up correctly, it might still be soft and sweet and attractive to the horse.

What to look for in legume hay. Legume hay is more controversial. When plants are harvested young (about 10% flower stage) the hay will have more leaves, thinner stems and be soft. The protein content will be very high and you will probably be paying for extra protein that the horse does not need and will convert into ammonia. Mature legumes make hay that does not exceed the protein level required by horses and is cheaper. Unfortunately, it tends to be very coarse.

LEAVES AND STEMS. Leaf to stem ratio is important because it affects nutrition and softness. Leaves have more protein and digestible energy and less fiber than stems. More leaves means softer hay.

TOUCH.

Meaning to the horse. Horses' mouths, lips and tongues, are very soft; hence, softer hay will be consumed more readily, and there will be less waste. Even though some hay may meet or pass the nutritional requirements of a horse, it also has to be attractive and edible, or it will be wasted.

What to look for. Bales that you do not mind sticking your bare hand and arm into, or that you would like for a good nap!

SMELL. Sweet smell is attractive to people and horses, and it is also a good indication of having readily available energy (sugar). Much like soft touch, a sweet smell is an incentive for the horse to eat the hay and get its full nutritional value.

COLOR.

Meaning to the horse. Green is attractive to those of us taking care of animals, and is also a good indication of vitamin A. Bleached color indicates exposure to sunlight and likely oxidation of vitamin A, but other essential nutrients are still there! Despite the color, hay needs to be supplemented with appropriate vitamin-mineral mix.

What to look for. Green is appealing and assurance of quality, but in bad years do not get hung up on color. If in doubt, send a sample for an equine nutritional analysis. Analysis done for ruminants will not reflect the nutritional value to the horse.

CROP.

Meaning to the horse. Plants grown under cooler temperatures build more digestible fiber. 1st crop hays grown to a mature stage will have more fiber, which will be easier for the horse to digest and use.

What to look for. Just knowing whether it is 1st, 2nd or 3rd crop does not predict nutrient content. Maturity stage at which hay was cut is the foundation of its nutritional value. 1st and 2nd crop hays are allowed to "grow older" in order to improve yield, and 3rd and 4th crops are cut younger because winter does not allow waiting longer (see "Stage"). Curing and storing hay affects the nutritional value. When plants are cut, they will continue to use up the soluble sugars in the cell. The faster they dry, the faster this process will stop. This process continues as long as there is enough moisture, even after being baled causing the bale to heat up, increasing the risk for molding or burning. When buying hay, look for bales that have been stored in a barn at least one month; touch inside the bale and take a sample. If it is dry and not warm (much less hot!) nor moldy, the hay will remain the same quality if you store it well in your barn.

Meaning to the horse. Mold is very bad if horses inhale it, plus it has the potential to be toxic and/or upset the digestive system. **Note: feeding moldy hay is not nearly as important a cause of colic as is underfeeding forage.** Propionic acid is safe for horses and can be used to prevent molding of hay and grain. The horse has a very low pain threshold and can not tolerate the effect of certain molds or toxins to the gastrointestinal tract which is reflected as colic. Heaves is a bigger problem when dealing with moldy hay. A horse with heaves should not be exposed to mold spores or dust.

MOLD.

What to look for. Before buying a truckload of hay, be sure to inspect the inside of at least one bale. If the hay has been in storage for one month and it is not moldy, then the risk of it getting moldy is very low. Do not buy it if it is moldy, it will only get worse. To be sure, buy hay that has been stored for two months after it was baled, and has no mold at that point. Even if it seems cheaper, buying directly from the field can become more expensive if the load molds in your barn.