

CONSERVATION *Journal*

A Conservation Education Initiative of Tri-County/City Soil and Water Conservation District

Equine: *Hay is For Horses Too*

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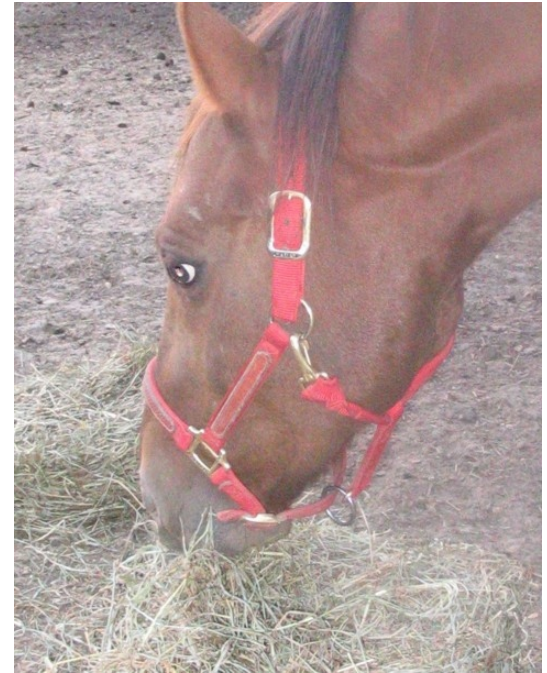
Hay is for horses. Horses are a grazing species and pasture and hay should be the major component of their diet. A visual inspection and a chemical analysis of hay are two methods that can be used to evaluate hay. A visual inspection of hay includes evaluating quantitative characteristics and requires the sense of smell as well as sight. A visual inspection of hay includes; color, aroma, signs of mold and dust, and the amount of leaves, stems and seed heads.

The ideal color of hay is bright green. Hay cut at the correct stage of maturity, baled without being rained on or exposed to long periods of the sun will have a nice green color. Beige and brown colors indicate hay that has been bleached or exposed to the leaching effects of rain. Weeds can contribute to a greener appearance but do not add to the nutritional value and can reduce the palatability of hay. Color is not a good indicator of nutritive value. Hay should have a pleasant aroma. A musty smell is an indication of mold or heating after harvesting and during storage. Molds and the heating of hay during storage can cause hay to be dusty, which can lead to respiratory problems in horses and in some cases permanent lung damage.

Leaves contain the highest level of digestible nutrients in plants commonly used for hay. Two factors affect the amount of leaves in harvested hay: the stage of maturity, and moisture levels when the hay is baled. As forage plants mature, the amount of stems and seed heads increase and the amount of leaves is reduced. Hay baled at the ideal moisture range of 17 to 20% will retain more leaves than very dry hay. When hay is too dry, leaves shatter, fall off and are lost in the baling process.

The amount of leaves compared to stems and seed heads is a sign of the stage of maturity at harvest. Leaves contain highly digestible plant sugars, starches and protein. Stems contain lignin and cellulose which are hard to digest. As the forage plants mature the level of digestible nutrients decrease. The more leaves present in hay the more likely the hay will contain a greater level of digestible nutrients. The appearance of seed heads and mature flowers indicate that the hay was mature when harvested and that the nutritive value will be lower than less mature hay.

How does this apply to the horse or horses that you own? The answer depends on the horse needs based on age, work requirements, growth, gestation and lactation and the quality of hay. As grazing animals horses have adapted to using forages as their primary source of nutrition. A horse can consume 1 to 2% of its body weight in dry matter. Dry matter is a measure, by weight, of how much hay or grain remains after all moisture is removed. For example, a 50- pound bale of hay at 85% dry matter would have 42.5 pounds of dry matter. A 1,200 pound horse could eat 12 to 24



pounds of dry matter every day.

A horse needs 1% of its body weight in long-stem dry matter (hay) to maintain digestive functions. The cecum and colon makeup 65% for the digestive capacity in a horse and they contain a microbial population which helps digest fibrous feeds much like the rumen in cattle or sheep. In addition to maintaining good digestive function the feeding of adequate quantities of hay help reduce behavioral problems such as wood chewing and cribbing.

We should use hay first to meet the horses' nutritional needs and supplement with grain, vitamins and minerals. At a minimum, hay or pasture should provide 50% of the dry matter part of the diet. In many cases 100% of the horse's requirement can be met with hay.

The highest quality hay is not necessary for all horses. A mature horse that has a light or no work demand can do very well on mid-maturity grass hay or mid to late maturity alfalfa hay. These stages of maturity can be used to satisfy the dry matter intake requirement or in other words satisfy the horse's appetite while meeting the nutrient requirements. Nutrient requirements increase for horses with a heavy work load, during late pregnancy and lactation and for young growing horses. These horses need higher quality forages to meet their nutritional demands. Early maturity alfalfa and timothy hays are ideal for these horses. Grain supplementation may be required depending on the nutritional demands of the individual horse and quality of hay available.

Fescue hay is commonly available and can be fed to horses. It is true that most fescue hay available in Virginia contains the endophyte fungus which can cause foaling problems and lack of milk production. The adverse affect of the endophyte can be over come by not feeding fescue hay or pasture during the last 90 days of pregnancy. For other horses fescue and fescue blends are acceptable forage sources.

Hay that has been stored for more than one year will retain most of its energy, protein and mineral content. The longer hay is stored the dryer it may become. As hay dries in storage it can become more brittle which can result in higher leaf loss so more hay may be wasted in the transportation and feeding processes. Also, the dust factor may increase with long-term storage.

Hay is in short supply this year, and horse owners who can only purchase and store a limited amount of hay are handicapped. While it may be too late this year to increase storage capacity, in the long run having the space to store a winters feeding of hay may be beneficial. A ton of hay takes about 200 cubic feet of storage space. An 1,100 pound horse consuming 2% of its body weight in hay will require 3 tons of hay in 9 months. This would require a 10 ft by 10 ft storage space 7 ft tall.

Is chemical analysis to determine the nutritive value of hay worth the cost and effort? A chemical analysis is the only way to determine the nutritive value of hay. The visual inspection is informative but does not provide any absolute information on the nutritive value. A chemical analysis of a large quantity of hay from the same field harvested and baled at the same time is a valuable tool in planning a feed ration. For the horse owners making frequent purchases of small amounts of hay that are not harvested from the field at the same time -- the time, effort, and cost may outweigh any benefit. It takes time to gather representative samples, ship the samples to the lab, and have the results returned to the owner.

Some final thoughts about evaluating and purchasing horse hay. When you can inspect the hay prior to purchase, look for hay that has good color and aroma, lots of leaves from forage species, avoid musty and dusty hay and discriminate against weeds and overly mature hay. Purchase hay from a reliable supplier. Consider expanding storage capacity to enable the advance purchase of large hay quantities and avoid hoof to mouth purchases.

For more information on equine forage and grazing, please contact John Howe at
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