“Needs” and “Wants”?

Hay producers have to satisfy two types of clients, horses and humans. Horses need clean hay that has a nutritional value that is appropriate for the requirements of the horse. Clients want hay that is consistent, convenient and cost effective. So, in many cases the “needs” of the horse and “wants” of the human are not exactly the same.

How Much Hay Does A Horse Need?

The amount of hay a horse needs will be influenced by the nutrient requirements of the horse as well as the nutrient content of the hay, and any other feeds the horse is receiving. Most horses will consume 1.5 – 2.0 lbs of hay (or equivalent pasture) for each 100 lb of body weight (so 18 – 24 lb of hay for a 1200 lb horse). The more palatable the forage the higher the expected voluntary intake by horses. Lactating mares will consume higher amounts of forage than horses at maintenance. Elite performance horses and weanlings might receive somewhat lower levels of forage because they will be receiving significant amounts of concentrate. Restricting forage intake can lead to digestive disturbances and behavior problems, so the minimum hay (or pasture) intake for any horse should be about 1 lb of hay for each 100 lb of body weight. This amount of hay would not meet a horse’s nutrient requirements so additional feed would be necessary when a horse receives this limited amount of hay.

What Quality of Hay Does A Horse Need?

Hay quality can be evaluated in several ways, but cleanliness and nutritional value are important for horses.

Cleanliness: Hay that contains dust or mold can irritate the horse’s respiratory tract. Optimum athletic performance depends on a healthy respiratory
tract, therefore dusty/moldy hay should never be fed to horses used (or intended for) athletic events. A chronic respiratory disease commonly called “heaves” can be aggravated by moldy and dusty hay. Horses with heaves can have so much difficulty breathing that even mild exercise is impossible. In addition, moldy hay can contain toxins that can affect the horse if they are ingested.

Horse owners should not rely on the nutritional wisdom of horses to prevent problems associated with moldy hay. Horses will usually avoid small patches of moldy hay, but selectivity decreases as hunger increases.

Mold is usually found in hay that is baled at too high a moisture content; but dust can be found in hay that is baled under dry conditions. Dust and dirt can also irritate the horse’s respiratory tract, and care should be taken to avoid hay that has a lot of dirt and dust.

Hay that is clean is also free of weeds, especially ones that are potentially harmful to horses. Harmful weeds include poisonous plants, but also thistles, nettles and other plants that can cause physical injury. These types of weeds can influence the acceptability of the hay to horses and increase waste.

**Nutritional Quality:** There are usually two main factors that influence the nutritional quality of hay: stage of maturity at harvest and type of plant. Plants harvested in early maturity are usually higher in protein, more digestible and more palatable than plants harvested in late maturity. Legumes are usually higher in protein, more digestible and more palatable than grasses.

Grass hays harvested in late maturity usually have relatively low nutrient values. When hay has fewer nutrients per pound, it will be necessary to feed more pounds to achieve the same nutrient intakes, or it will be necessary to provide more supplemental concentrate. Lower quality hay is often lower in palatability. Hays that are lower in palatability will have higher rates of waste. In general, hays with low nutrient value are less desirable for horses. However, hays with low nutrient values may be suitable for horses with low nutrient requirements, especially if those horses tend to be inactive and overweight!

Legume or grass-legume mixed hays that were cut in early or mid-maturity are useful for horses with higher requirements (lactating mares, growing horses, horses in moderate or heavy exercise). Using high quality hay, horses will be able to obtain 50-70% of their nutrients from the hay, and the remainder from a grain-based concentrate. The amount and composition of the concentrate should be adjusted to complement the type and amount of hay that is being fed. In general, as hay quality increases, less concentrate/supplement will be needed to meet nutrient requirements.
Although horses exhibit preferences for certain types of hay, most types of hay can be used for horses. Common types of hay used for horses include alfalfa, red clover, timothy, orchardgrass and bromegrass. Bermudagrass is also used for horses. Recently we have investigated the acceptability of teff hay for horses. Teff is a summer annual that can produce reasonably good yields. We found that teff is most acceptable if it is harvested at a relatively early stage of maturity.

Although tall fescue can be used for horse hay; there are two general precautions. Generally tall fescue harvested in later maturity is relatively low in palatability, so waste can be high and overall feeding value might be low. Second, tall fescue can be infected with an endophytic fungus that produces compounds that are harmful to pregnant mares. Endophyte infected tall fescue can cause prolonged gestation, difficulty foaling and decreased milk production. Unless tall fescue hay is known to be free of the toxic endophyte, it should not be fed to pregnant mares.

Some horse owners have concerns about feeding alfalfa hay. Allowing horses unlimited access to very high quality alfalfa hay may result in some digestive upset (such as diarrhea). Horses that have restricted exercise and low nutrient needs can also get too fat if too much high quality alfalfa hay is fed. Therefore, it may be necessary to restrict the amount of very high quality alfalfa that is fed to some horses; especially those with lower nutrient requirements. High quality alfalfa is most useful for horses with high nutrient requirements such as weanlings. Mid and late bloom alfalfa hay as well as alfalfa-grass mixes can be fed to most classes of horses.

Recent research suggests that alfalfa can be more beneficial to the equine digestive tract than some other hays. Many performance horses develop stomach ulcers. No one understands exactly why horses get stomach ulcers, but stress and diet have been proposed as the two most likely causes. A study at Texas A&M University examined the stomachs of horses in training that were receiving diets of forage and grain. When alfalfa was used as the forage, the incidence and severity of the stomach ulcers was less than when grass hay was used as the forage. This study supported an earlier experiment in Tennessee that suggested that a high concentrate diet that contained alfalfa hay was healthier for the stomach than a diet that utilized grass hay. These researchers have suggested that alfalfa might buffer stomach acid more effectively than grass hay because it is higher in calcium, protein and potassium.

Horse owners should be aware that alfalfa hay has been associated with a few problems in horses. Alfalfa hay that may be contaminated with blister beetles should not be fed to horses. Blister beetles contain a toxin that can be fatal to horses. In some parts of the U.S., a small percentage of horses fed alfalfa hay have developed intestinal stones. These “enteroliths” are composed of
magnesium and other minerals that collect around some type of small object. If an enterolith becomes large enough it can block the gastrointestinal tract and cause colic, and potentially death. Although enteroliths can occur, their incidence is quite low.

**Consistency, Convenience and Cost**

Horse owners want hay that looks, smells and feels the same from bale to bale and load to load. When the hay is consistent, the remainder of the feeding program can also remain relatively consistent. Dietary changes are a risk factor for colic, so feeding a consistent diet is usually considered a good management practice.

Convenience is also important to horse owners, especially to those who feed their own horses. One of the major factors affecting convenience is bale size. Small square bales are still preferred by many horse owners because they are easier to handle. Bales that weigh 50-60 lb can be managed by most horse owners, whereas bales that weigh more than 100 lb may be difficult to move easily.

Large round bales can be a convenient means of feeding hay to horses that are kept in pastures. Large round bales that are mold-free and have been stored inside can be used for horses. Round bales can become moldy in the field if they are not consumed rapidly; therefore, it is best if round bales are used for relatively large groups of horses that consume the bale in just a few days. One of the disadvantages of using round bales is that waste may be quite high. In addition, the horse owner must have the proper equipment to move the round bales and also to clean up the wasted hay in the feeding area.

Because many small horse operations do not have the trucks or trailers to move large amounts of hay, delivery service is often a major convenience. Some horse owners are willing to pay a higher price for the convenience of someone else delivering and stacking their hay! Conversely, some horse owners have limited storage space and the ability to pick up small amounts of hay at a time is important to them.

Cost is always a primary consideration for horse owners. Hay should be purchased on an equivalent weight basis. Comparing prices by the ton is easy; comparing prices “by the bale” is very difficult. Many horse owners do not appreciate that a relatively small increase in bale weight can compensate for a higher price per bale. If a 60 lb bale costs $4.50; the hay costs 7.5 cents per pound. If a 50 lb bale costs $4.00, the hay costs 8 cents per pound. Another way to look at it is to calculate the cost per ton for each hay…the 60 lb bale that costs $4.50 will cost $150/ton; whereas the 50 lb bale that costs $4.00 will cost...
$160/ton. Which-ever way you choose to look at it, in this example the “cheaper” bale is really more expensive!

Hay cost should also be considered in the context to the total feeding program. Hay with low nutrient value might cost less per pound, but it could actually increase the cost of the total feeding program because more supplementation will be needed.

Where Can I Get Additional Information?


And visit the website for the University of Kentucky College of Agriculture! www.ca.uky.edu