

The Myths and Facts of Spring Grazing

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Recent advances in equine nutrition research have found an association with grazing lush pastures and laminitis (founder) in horses. This has resulted in misinformation that has spread across the country like wild fire. Primarily the data from these many research findings have been misinterpreted and has created much confusion. Many horse owners are afraid to allow their horses to graze spring lush pasture and some are afraid of putting horses on pasture altogether. This article will focus on management of different types of horses with recommendations for grazing lush pasture.

A survey conducted by the United States Department of Agriculture found that of the reported cases of laminitis in the United States, 45.6% of these were from grazing lush pastures. This has been attributed to the advances in forage varieties used in pastures to increase production in dairy and beef cattle. Horses evolved as non-ruminant herbivores on open planes consuming forages that were sparse and of lower quality than modern forages. These prehistoric horses traveled great distances grazing throughout much of the day. This is in contrast to modern horse husbandry where horses may be limited to spending much of their time in a box stall with turnout in small paddocks and consuming their diet in two large meals. The digestive system of horses developed with a hindgut for digestion of fiber by microorganisms and is sensitive to abrupt changes in diet and high levels of rapidly fermentable carbohydrates.

Although laminitis has many causes, nearly half of the cases in the U.S. are associated with grazing pastures during certain times of the year, particularly in the spring, when nonstructural carbohydrate (NSC) content is high. Spring pastures are high in NSC, including sugars, fructans and starches, because the plants are young and growing and environmental conditions favor accumulation of carbohydrates. Sugars (glucose, sucrose, and fructose) are the readily available carbohydrates in plants. Fructans are the primary storage carbohydrate in cool season grasses (tall fescue, orchard grass and ryegrass), and starches are the primary storage carbohydrate in legumes (clover and alfalfa) and warm season grasses (bermudagrass).

Laminitis is caused by digestive and metabolic disorders in horses associated with high intakes of NSC. Rapid intakes of forages with high NSC content results in rapid fermentation in the hindgut leading to a cascade of events culminating in laminitis. Intakes of forages with high NSC content can also lead to insulin resistance, which is a predisposing condition for laminitis.

Research is focusing on identifying animals predisposed to developing laminitis, and countermeasures for the avoidance of dietary risk factors associated with laminitis. Since many cases of laminitis are associated with pasture consumption, one way to avoid the disease is to restrict access to pasture when NSC content is high, and feed alternative feeds that are known to be lower in NSC.

Breed, age and sex are all implicated with the occurrence of laminitis. It is generally accepted that ponies have a greater predisposition to laminitis. Ponies and horses are obese or that have previously had laminitis, or have certain other diseases (pituitary pars intermedia dysfunction, ie. Cushings disease) are also at increased risk for laminitis. Researchers from

Virginia Tech identified a pre-laminitic metabolic syndrome (PLMS) that included insulin resistance, elevated triglycerides in the blood and obesity in Welsh and Dartmoor ponies. Laminitis occurred in many of these ponies in April and May, when pasture NSC content was at its highest.

It is important to remember that not all horses and ponies are susceptible to developing laminitis, and proper grazing management can often avoid the onset of the disease in the individuals that are susceptible. If you suspect your horse or pony is prone to laminitis it is best to restrict its access to pasture and supplement it with hay forage and a feed that are both low in NSC. Hay can also have high NSC content, thus it is a good practice to have it analyzed by a laboratory. There are currently no designated cut-off points for "safe" levels of NSC in forages and feeds, so making specific recommendations is difficult. However, current advice is centered on restricting access to pastures when the time of day, time of year, and subsequent environmental conditions are known to coincide with elevated NSC content in forages. Levels of NSC are typically lowest before sunrise and increase throughout the day with the peak in the late afternoon. Overcast and humid conditions favor low NSC levels, and it may be safer to allow grazing under these conditions.

Most horses do not develop these problems when grazing spring pasture; however it is important to take measures when introducing horses to lush pasture. Horses that are managed on a pasture prior to the rapid growth in the early spring will go through a gradual adaptation period as the forage grows. Problems arise when horses are managed on hay in a stall or dry lot and then moved to pasture when the NSC content is high. We recommend changes in management from feeding hay only to pasture be implemented gradually. Horses on pasture will graze will graze up to 18 hours per day and limit grazed horses will consume as much forage in a shorter period of time. A method for limiting intake and allowing horses to have free access to exercise is to implement the use of a grazing muzzle. Grazing muzzles are either attached to a halter or have a crown strap that attaches over the horses poll. They are designed with a small hole that allows the horse to only take small bites of forage, thus limiting intake. When using this device, horses should be monitored to ensure that it is not interfering with water consumption. The grazing muzzle was invented as a way to manage obese horses on pasture by limiting intake. The body condition and weight should be monitored to ensure the horse is either maintaining body condition or losing weight if so desired.

If you suspect your horse is developing laminitis this spring, call your veterinarian and remove the animal from pasture immediately. A horse that is developing laminitis may appear hoof sore, and reluctant to walk or put weight on its front feet. Once laminitis occurs it is extremely difficult to treat, and horses often never recover fully, thus avoidance is essential to ensure the health and longevity of your horse or pony. The Southeast Equine Conference focusing on Nutrition, will be held in Memphis, TN on May 8 - 9, 2008 and is available as an interactive webcast. Contact your county Extension office or Preston R. Buff (pbuff@ads.msstate.edu, 662-325-2852) for more information.