



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Stretching Your Hay Budget

Most livestock owners, including horse owners, have noticed that the price of feed (both hay and grain) has increased. There are several key factors that have contributed to these increases, including extreme weather patterns, high oil prices, currency fluctuations, and a surge in global food demand. Horses have evolved on diets composed entirely of forage. Therefore, forage should be the primary component of a horse's diet (at least 2/3 of their diet). Thus, horse owners, unlike other livestock owners, have few options other than forages to use to meet their horse's nutritional requirements. However, there are management practices and a few forage alternatives that can help horse owners ride out high feed prices.

Management Practices. Take a critical look at equine body condition and maintain a body condition score of 5 (on a scale of 1 to 9). Horses that maintain their weight on forage-only diets do not usually require any concentrate (grain). A well-formulated ration balancer (concentrated vitamin and mineral mix) will ensure that vitamin and mineral needs are being met when dried hay is the sole dietary component. Even the best, nutrient-dense hay will be deficient in essential vitamins and minerals, including vitamin E, copper, zinc, iodine, selenium and manganese (in alfalfa hay).

While all forage offered to horses should be free of dust, mold, weeds, and foreign debris, the nutrient density of the forage offered can vary depending on the type of horses being fed. Forage selection should be based on horse needs, as there is no one forage best suited for all classes of horses. For example, providing a nutrient dense forage like vegetative alfalfa hay to 'easy keepers' can create obesity issues; however, that same hay would be a good option for a performance horse with elevated nutrient

requirements. Have hay tested for quality to help determine how much and what type is best to feed to individual horses. Keep in mind that higher quality hay usually demands a premium price and such hay is not needed by all groups of horses. Finally, older hay, if stored properly, is usually a great option for horses.

Plan ahead and know how much hay you need. Horses eat roughly 2 to 2.5% of their body weight each day. For example an average 1,000 pound horse will eat around 20 to 25 pounds of feed (hay and grain) daily, plus water. Weighing the amount of feed offered will help to avoid over-feeding. When calculating hay needs, make sure to account for wasted hay. For example, in a recent study conducted by the University of Minnesota, feeding round-bales to horses without a round-bale feeder resulted in 57% waste, while using different feeders ranged from 5 to 33% hay waste.

The prices of all feed ingredients have increased. Lower-quality, inexpensive grain substitutes (i.e. oat and rice hulls) can lower the nutritional content and palatability of feed. In other words, "you get what you pay for". When feeding a concentrate is necessary, purchase a high quality product.

Finally, have a good working relationship with a hay supplier to ensure a consistent and reliable source of hay. Consider adding hay storage space to reduce the effects of price and seasonal fluctuations. For example, hay is sometimes more expensive in the winter vs. the summer. Buy hay early (do not wait for late cuttings) and budget for the price increase by re-evaluating how many horse you can afford to feed.

Next month, we'll discuss forage alternatives. *Authors: Krishona Martinson, PhD and Marcia Hathaway, PhD, University of Minnesota.*

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Upcoming Events

Equine Business Online Courses & Webinars Series

Optimizing the Horse Industry Labor Force: A FREE Online Training Program. Free webinars on February 7, 14, 21, 28, 2013 <http://myhorseuniversity.com/ebn/>

In partnership with MHU and funded by the North Central Risk Management Education Center

Hands-on Horse Owner Education Series

February 28: Stretching Your Hay Supply
March 7: Hoof Care
March 14: Horse Handling
Thursdays from 6:00 to 8:00 pm at the Univ. of Minn. Equine Center. \$15 for each session or \$40 for all three.

Registration required two days before the program and is available online at www.extension.umn.edu/horse

Minnesota Horse Expo

April 26, 27, 28, 2013
MN State Fairgrounds
www.mnhorseexpo.org/

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Research Update - Grazing Muzzles Summarized by: Beth Allen, Univ. of Minn.

Grazing muzzles can be used to reduce pasture intake and are alternatives to isolating horses in dry lots and stalls. There is limited information on the extent of intake restriction imposed by grazing muzzles. Therefore the objective of this study, conducted by researcher in England, was to quantify the effect of wearing a grazing muzzle on forage intake by ponies.

Four mature ponies were used for this study. Pasture intakes were

measured on four, 3 hour occasions per pony when fitted with a muzzle or grazing without a muzzle. Pasture intake was determined by change in body weight after grazing.

Pasture intakes were significantly reduced when ponies were fitted with a grazing muzzle. Ponies averaged 1 pound of forage per 3 hours with grazing muzzles compared to 7 pounds of forage per 3 hours without a muzzle, representing a 83% reduction in

pasture intake for ponies wearing grazing muzzles compared to those without. Pasture dry matter intake by ponies without grazing muzzles averaged 0.8% body weight during the 3 hours, which is equivalent to one half to two-thirds of the recommended daily energy requirement.

This evidence suggests that grazing muzzles are an effective means of restricting pasture intake by ponies.

Neurologic disease in horses: Part II By: Carrie Finno, DVM, PhD, Univ. of Minn.

This article is part of a series discussing diseases of the nervous system of horses. Part I focused on the neurologic exam. Part II will discuss diagnostic tests that can help to determine the cause of neurologic abnormalities, and Part III will review treatments.

The neurologic exam answers two questions: does your horse demonstrate neurologic abnormalities? If yes, what specific part of the nervous system is affected and to what severity?

Localizing the clinical signs to specific regions within the nervous system is important because different diseases affect different regions. The following region/categories are often used:

- Cerebrum (part of the brain responsible for consciousness and thought processes)
- Cerebellum (part of the brain that allows for smooth movement patterns and control)
- Brainstem (part of the brain that controls heart rate, breathing, facial nerves and relays sensory and motor pathways from parts of the spinal cord)
- Spinal cord (cervical [neck], thoracic [withers and back], lumbosacral [hindquarters])
- Peripheral nerves (part of the

nervous system OUTSIDE the brain and spinal cord)

- Neuromuscular junction (where the peripheral nerves and muscles meet)

For this series, we'll focus on diseases that affect the spinal cord as these are the most common neurologic abnormalities encountered in the horse. If your veterinarian suspects neurologic abnormalities that localize to other regions, the diagnostic tests would differ from what are discussed here.

The predominant clinical sign involved in all the diseases we will be discussing is ataxia. Ataxia is defined as the inability to control voluntary movement, and most frequently results from disorders in particular regions of the brain or spinal cord. There are different types of ataxias:

- Cerebellar ataxia: irregular, uncoordinated movement that is due to dysfunction of the cerebellum
- Sensory ataxia: ataxia due to the loss of proprioception (joint position sensation) that results in poorly judged movements. Sensory ataxia is typically caused by abnormalities in the spinal cord, although portions of the brain may be involved as well.

- Vestibular ataxia: ataxia that may result in a head tilt, circling and imbalance due to abnormalities in the balance (vestibular) system within the inner ear and brainstem.

For this series, we'll focus primarily on sensory ataxias due to spinal cord disease. Many horses with sensory ataxia will also present with signs of weakness and a veterinarian will classify the type of weakness as upper (hyperactive, signs of spasticity) or lower motor neuron (diminished reflexes, muscle atrophy). Your horse's neurologic signs will be graded. Each limb is graded separately with regard to four aspects: ataxia, weakness, dysmetria (combination of overshooting and weakness commonly observed with disease of the cerebellum) and spasticity.

- Grade 0: Normal; no deficits
- Grade 1: Mild intermittent gait deficits
- Grade 2: Mild consistent gait deficits
- Grade 3: Moderate consistent gait deficits
- Grade 4: Severe consistent gait deficits
- Grade 5: Recumbent

Next month we'll continue by discussing the four major causes of spinal ataxia in the horse.