



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Volume 9, Issue 4

April 2013



## U of M Speakers and Topics at the MN Horse Expo

|                                |   |                        |              |
|--------------------------------|---|------------------------|--------------|
| Friday, April 26<br>11:00 am   | Managing Drought In Your Horse Pasture          | Dr. Craig Sheaffer     | DNR Building |
| Friday, April 26<br>3:00 pm    | Managing Horse in Extreme Weather               | Dr. Krishona Martinson | DNR Building |
| Saturday, April 27<br>11:00 am | Feeding the Hard (and Easy) Keeper on a Budget  | Dr. Marcia Hathaway    | DNR Building |
| Saturday, April 27<br>3:00 pm  | Stretching Your Hay Budget and Hay Alternatives | Dr. Krishona Martinson | DNR Building |
| Sunday, April 28<br>11:00 am   | Managing Horse in Extreme Weather               | Dr. Marcia Hathaway    | DNR Building |
| Sunday, April 28<br>1:00 pm    | Feeding the Hard (and Easy) Keeper on a Budget  | Dr. Marcia Hathaway    | DNR Building |

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## Upcoming Events

### Minnesota Horse Expo

April 26, 27, 28, 2013  
MN State Fairgrounds  
St. Paul, MN

[www.mnhorseexpo.org/](http://www.mnhorseexpo.org/)

### **“Like” us on Facebook!**

Forage Mondays, Tip of the Week Wednesday, and Friday Funnys.

Check out upcoming events and other timely information.

[www.facebook.com/UMNHorse](http://www.facebook.com/UMNHorse)

### **Looking for a “speaker” for your next equine function?** Consider using

our free, recorded webinar library! Topics range from ticks, to vaccinations and deworming, genetics, and reducing hay waste.

[www.extension.umn.edu/horse/webinars](http://www.extension.umn.edu/horse/webinars)

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## Ask the Expert: Timothy Hay By: K. Martinson, PhD, U of MN

**Q:** I heard the best time to harvest horse quality timothy hay is in the bolt phase (right before heading). The farmer has been trying to sell me hay with timothy heads; the hay is very coarse and has few leaves. Is it worth waiting until second cutting hay?

**A:** Unlike many other cool-season grasses (i.e. orchardgrass, bluegrass, fescue), timothy sends up seed heads after each cutting. Most other grasses will only send up seed heads once in spring, and once cut will remain vegetative with no seed heads. For example, it's common for first crop orchardgrass to include seeds heads, while subsequent cuttings will not. So, it is rare to find timothy hay without seed heads. More mature grasses will be lower in quality since maturity at the time of cutting dictates forage quality.

If you are concerned about the quality and coarseness of the hay, select a mixed cool-season grass hay as most cool-season grasses will remain vegetative after first cutting.

However, to lessen the chance of weather (i.e. too much or not enough rain) affecting your ability to secure hay, it is generally recommend to purchase 50% of your hay needs during first cutting and 50% during second cutting; assuming your hay supplier is operating on a two-cut system. If your hay supplier is operating on a three-cut system, purchase a third of your hay needs from each crop.

First cutting will likely be more mature (because of rapid growth in the spring) and less calorically dense compared to subsequent cuttings; however, use that to your advantage. Feed first cutting hay to maintenance horses or ponies and keep the better quality, later cut hay for horses in an exercise program or ones with greater caloric needs (i.e. growing horses, broodmares).

A forage analysis will provide the nutrient content of the hay; however, make sure to request an equine forage analysis.



## Research Update - Hay Steaming

By: Krishona Martinson, PhD, Univ. of Minn.

Management strategies for horses with respiratory disease include soaking hay prior to feeding. Hay steaming is an alternative to this practice; however, little is known about its impact on forage nutritive values or intake. The objective of a study recently conducted at the University of Minnesota was to determine the effect of steaming on forage quality and intake by horses.

Two alfalfa orchardgrass mixed hays were evaluated: a low and moderately moldy hay. Each day, one bale of each hay was steamed for 90 minutes using a commercial hay steamer (Happy Horse Products; Figure 1). Two flakes of steamed or un-steamed low or moderately moldy hay were offered simultaneously to six adult horses in individual hay nets (three horses per treatment). Horses were fed for 5 days and then switched hay types for 5 additional days. Horses were allowed access to hay for 2 hours and dry matter intake was

calculated. Flakes of un-steamed or steamed hay were also agitated in an electric cement mixer, and dust concentrations were recorded every min for 30 minutes using a tapered element oscillating microbalance (TEOM) sampler.

Figure 1. Hay steamer



Steaming increased hay moisture and therefore reduced dry matter to 77 and 71% for low and moderately moldy hay, respectively. In both low and moderately moldy hay, steaming reduced phosphorus content. Steaming reduced water soluble and ethanol soluble carbohydrate content by 13% and 27%, respectively, for moderately moldy hay, but had no effect on low mold hay. Steaming reduced mold

levels in both hays. Dust concentrations of moderately moldy hay were reduced by 55%; however, dust levels in low mold hay were not affected by steaming. Dry matter intake of low mold hay was increased by steaming; however, dry matter intake of moderately moldy hay was not affected by steaming.

For hay with low mold levels, steaming decreased mold levels, increased dry matter intake of the hay, but had no effect on dust level. In moderately moldy hay, steaming reduced mold and dust levels, but did not improve dry matter intake. Steaming represents a management strategy for reducing dust and mold levels and increasing dry matter intake in some hays. However, steaming should not replace the main goal of feeding good quality (i.e. low in dust and mold) hay.

*Co-authors: J. Earing, PhD, M. Hathaway, PhD, C. Sheaffer, PhD, B. Hetchler, L. Jacobson, PhD, and J. Paulson, University of Minnesota and Tennessee Farmers Cooperative.*

## Neurologic Disease in Horses: Part II

By: Carrie Finno, DVM, PhD, Univ. of Minn.

The 4 major causes of spinal ataxia in the horse are:

- Neuroaxonal Dystrophy/Equine Degenerative Myeloencephalopathy (NAD/EDM)
- Cervical vertebral compressive myelopathy (CVCM or "Wobblers" disease)
- Equine Protozoal Myeloencephalitis (EPM)
- Trauma

NAD/EDM is a neurologic disease that typically affects young (<3 years old) horses of various breeds. Males and females appear to be equally affected. NAD/EDM appears to be an inherited condition and often the disease is observed on

breeding farms or occurs within siblings or half-siblings. There is also strong evidence that dietary vitamin E, especially in utero and during the first year of life, plays an important role in the development of NAD/EDM. Current evidence suggests that horses may be genetically "at risk" to develop NAD/EDM and then, if they are in a vitamin-E deficient state in utero and during the first few months of life, the disease becomes apparent.

Clinical signs include a symmetric sensory ataxia with upper motor neuron weakness (identical to ones observed for CVCM).

At this time, there is no genetic test available for NAD/EDM. It is

recommended to test your horse's blood for vitamin E levels. A low vitamin E level is suggestive that your horse may have NAD/EDM but a normal/high vitamin E level does not rule the disease out, especially considering the fact that many horses aren't examined until they are over 1 year of age and the deficiency may have occurred earlier in their lives.

The University of Minnesota is currently doing research on this condition. Please contact Dr. Finno at [cifinno@gmail.com](mailto:cifinno@gmail.com) if you think your horse is affected.

Next month we'll discuss Cervical Vertebral Compressive Myelopathy (CVCM or Wobbler's disease).