



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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## Taking a Pasture Soil Sample

By: Wieland & Martinson, U of M

Testing your soil for nutrient levels is necessary to find out how much, if any, fertilizer may be needed in a horse pasture. Soil testing should be done every 3 years. The best time to take a soil sample is in the fall, but anytime the soil is relatively dry is acceptable. If the pasture area to be tested is consistent (similar soil type, drainage capacity, topography, etc...), use one sample for up to 20 acres. If the pasture has dramatically different areas, then use one sample for each area.

To collect a sample, walk in a 'W' pattern and use a shovel (or a soil probe) to dig down 6". Remove the sod and place the shovel full of soil in a bucket. Repeat this several times as you walk the 'W' pattern. When finished sampling, mix the soil in the bucket and use a sub-sample (about a sandwich bag in size or 2 cups) to send to the lab for analysis. Repeat this procedure for each unique

area of the pasture.

Soils samples can be sent to the Soil Testing Lab (<http://soiltest.cfans.umn.edu>) at the University of Minnesota. There are several private labs that offer the service as well. For a U of M soil analysis, pick up a free soil test kit, which includes a form and bag(s), from your county's Extension office (<http://www.extension.umn.edu/offices/>). The form included in the kit has additional instructions for taking the sample and where to mail it. Ensure the form is completely filled out and clearly state this is a pasture soil sample.

When the soil analysis is received, it will list phosphorus, potassium, nitrogen, pH, and organic matter levels. Based on this information, an accurate fertilizer mix and application can be made. As fertilizer prices and environmental concerns continue to rise, it is critical to base your pasture fertility on an analysis.

## Ask the Expert

By: Sandra Nogueira Koch, DVM, Univ. of Minn.

**Q:** I'm having problems with rain rot in my herd. I am treating it with a topical spray, but it will not go away. Do you have any suggestions?

**A:** Rain rot (if you are referring to dermatophilosis, a bacterial infection) is a common condition seen in horses during rainfall periods (since moisture predisposes the disease). Up to 80% of a herd can be affected.

Important things to remember about management are:

- Make sure you have the right diagnosis (other diseases can resemble rain rot)
- It is very important to keep the horses dry
- Most cases spontaneously regress within 4 weeks if the horses are kept dry
- Crust/scabs removal and disposal is

also helpful; crust removal may be painful and may require sedation.

- Topical therapy can help (2-5% lime sulfur, 4% chlorhexidine solutions) should be applied as total body shampoos or dips for about 5 consecutive days, then weekly until the scabs are healed. For the more localized lesions, use spray forms.
- Sometimes systemic therapy is needed (antibiotic such as penicillin or potentiated sulfas) mainly for severe, generalized, or chronic cases.

Other things that should be considered (for treatment and control) are improved hygiene conditions and management practice, nutrition, and insect control measures in addition to avoidance of mechanical trauma to the skin (if any apply to your situation).

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## Upcoming Events

### Fall Regional Horse Owner Programs

Saturday, October 3rd  
9:30 am to 4:00 pm  
U of M Equine Center  
St. Paul, MN

Saturday, October 24th  
1:00 to 4:00 pm  
Red Horse Ranch Arena  
Fergus Falls, MN

Saturday, November 14th  
1:00 to 4:00 pm  
Howard Lake Middle School  
Howard Lake, MN

*Registration soon available at:*  
[www.extension.umn.edu/horse](http://www.extension.umn.edu/horse)

### Appeal Option for Equine Taxpayers

The legislature is providing a property tax appeal for horse breeding or boarding properties if the property was classified as agricultural in 2008. If the use between 2008 and 2009 did not change, but the classification was changed, the taxpayer may appeal in writing to the Commissioner of Revenue before September 1, 2009.

Have questions, contact [proptax.questions@state.mn.us](mailto:proptax.questions@state.mn.us).



## Shivers: Creating a Foundation for Further Research

“Shivering” or “shivers” is a historic neuromuscular disorder that has been documented in draft horses and related breeds as early as the 1930s. Many horses that hold a hind limb flexed and tremble are said to have Shivers (Figure 1). However, many disorders can create irritation in the hind limbs of horses and cause this type of sign. Due to the lack of research, relatively little is understood about the clinical manifestation, pathogenesis, risk factors, or genetic tendency of the disease. Most importantly, there are no recognized effective treatments for Shivers.

Last year, a research team at the Univ. of Minn. initiated a project dedicated to gathering data on this debilitating disease. The research goals are to define the clinical

phenotype, risk factors, and disease progression of horses with Shivers.

The first step is to generate a comprehensive database of horses that have Shivers. Approximately 90 horses have been identified so far using muscle biopsy submissions to the Neuromuscular Diagnostic Laboratory. From this preliminary data, Draft horses, Warmbloods, and Thoroughbreds seem to be the groups that most commonly present with Shivers.

In order to identify more horses, a website devoted to Shivers was developed. On the website is a standard survey that asks questions on signalment, medical history, current diet, and attempted treatment of horses with Shivers. Owners of horses with Shivers are asked to submit video of their horse along with a completed survey so a

definitive diagnosis can be made.

Once a population of horses with Shivers has been identified, researchers can use statistic analysis to look for significant trends. If you are interested in learning more about the disease or you know of a horse with Shivers, please visit <http://www.vicstation.com> or e-mail Alex Bianco at [bian0031@umn.edu](mailto:bian0031@umn.edu).

For more information on Shivers, visit <http://www.cvm.umn.edu/umec/lab/shivers/home.html>

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Figure 1. A horse with signs of Shivers.

## Horses that Roar Continued

Palpation of the throat is the first step in identifying laryngeal abnormalities. Due to atrophy of the muscle, the cartilages can be more readily palpated on the affected side.

Endoscopic examination is indicated in all cases with respiratory noise or poor performance (if not related to lameness). The procedure can be performed in horses standing still or during exercise on a high-speed treadmill. Because many different conditions can lead to abnormal noise, endoscopic examination is essential to confirm the presence and determine the severity of laryngeal hemiplegia. The diagnosis is given based on the movement and symmetry of the cartilages. The cartilages should move fully open and closed in a mirror-like

fashion. Different techniques are used to stimulate the cartilages to move during the resting exam: stimulation of swallowing, slapping the withers, holding off the nostrils, etc...

Endoscopic examination immediately after exercise can also be useful, particularly if a high speed treadmill is not available. If it is possible to scope the horse within minutes of galloping, when the effects of elevated respiratory rate and airflow on the upper airway are still present, evidence of abnormal arytenoid function may be visible.

Ideally, horses are scoped while exercising on the treadmill. This allows for true evaluation of the arytenoid movement under working conditions. Changes are often seen on the treadmill that aren't seen in any other type of examination.

Evaluation for laryngeal hemiplegia is strongly advised prior to purchase of horses destined to be elite athletes.

Depending upon the intended use of the horse, there are several treatment options. Higher level athletes are often treated by “tieback” (tying the arytenoid out of the way) or arytenoidectomy (removing the arytenoid to open up the airway). Horses used more for pleasure riding or lower level work may benefit from laser surgery to remove parts of the arytenoid or vocal cords. Prognosis varies depending upon the use of the horse but 60 to 70% of racehorses improve, and the prognosis is even better in other groups of working horses.

*Dr. Modesto was previously with the University of Minnesota.*

By: Rolf Modesto, DVM, Univ. of Penn.