



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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The Role of Weather in Colic

By: Kentucky Equine Research

September begins the downward spiral in temperatures in much of the U.S. Do changes in weather increase the frequency of colic in horses? Some owners and veterinarians think so, while others are skeptical.

Several researchers have attempted to find a correlation between weather and incidence of colic, however, the evidence has not been conclusive.

Thirty-year-old reports from Europe suggested weather changes were associated with the highest rate of colic, specifically changes to cold and damp conditions or to warm and wet during advancing weather fronts.

Certainly, cold weather has been linked to increased impaction colic because lower temperatures often reduce water consumption.

However, in a Virginia-Maryland study performed more recently, weather did not appear to be related to colic. When events were investigated by looking at a

14-day window preceding colic episodes, low humidity and snow only marginally increased colic risk.

In a study in Virginia, seven cases of colic occurred during a heavy snowstorm over a three-day period. This was unusual as there were only 104 cases of colic in approximately 1,000 horses monitored for a full year. What became apparent from records kept by farms was the change in management due to the snowstorm. Horses were kept in stalls, rather than being turned out, and the diet was not altered, even though horses had no turnout or exercise. The increase in colic episodes in this study was most likely not directly related to the weather, but rather due to management changes caused by weather.

Take home message: As the seasons change, keep your management scheme consistent; if changes are necessary, make them gradually.

Make Better Use of Round-Bales

By: K. Martinson, U of M

Drought conditions have severely reduced the supply of hay and other feedstuffs, escalating the demand and driving up prices. Horse owners can reduce hay waste by using feeders and properly storing hay, especially when feeding round-bales.

In a study conducted in MN, feeding round-bales to horses without a feeder resulted in 57% waste. All nine round-bale feeders tested reduced hay waste, and ranged from 5 to 33% hay waste.

Research has shown outdoor hay storage losses can range from 5 to 35% depending on precipitation, storage site, and original condition of the bale. For example, the outer 4" layer of a 6' diameter round-bale contains about 25% of the total bale volume, and is most likely to be damaged by weather if stored

improperly or unprotected.

There are a number of techniques that minimize outdoor storage losses:

- Bale (or buy) a dense bale as the bales will sag less and have less surface area in contact with the ground.
- Use plastic wrap, net wrap, or plastic twine. Research showed that net wrapped bales reduced grass hay dry matter losses by 32% compared with twine bales when stored outside.
- Store bales on a well-drained surface. A well-drained, 4-6" coarse rock base will minimize bottom spoilage, as well as using wooden pallets.
- Never store bales under trees.
- Storage losses are usually reduced by approximately two-thirds with indoor storage and by one-half with good plastic covering (i.e. a tarp) outdoors.

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Upcoming Events

MN Nutrition Conference - Equine Session

Wednesday, September 19
8:00 am to noon
Owatonna, MN

Program focuses on equine gut health and the role of pre- and probiotics.

\$100 per person (before September 9th).

[Click here to register.](#)

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krishona@umn.edu

Last month to register for 2012!

Regional Horse Owner Program—Fergus Falls

Red Horse Ranch Arena
Thursday, November 8th
6:00 to 8:30 pm

Registration and program information will be available in October.

The University of Minnesota is an equal opportunity employer and educator.



Hoof Abscesses Continued

Author: Felice Cuomo, DVM, U of M Class of 2012

The goal of treatment is to drain the abscess and prevent further contamination. Due to the level of pain, it isn't humane to wait for the abscess to rupture on its own. A veterinarian will try to pare away a hole, just large enough to allow drainage of the pus pocket. The pain relief is usually immediate.

After the abscess is opened, an antiseptic dressing, such as providone-iodine or a medicated poultice pad (i.e. Animalintex Poultice Pad) is applied to keep the abscess draining for the next 48 hours. A waterproof bandage such as a diaper applied with duct tape, or a hoof boot, is used to cover the poultice and hoof. It is imperative that the protective bandaging/boot stays clean to prevent prolonged infection and contamination of the draining hole. The horse should

remain in a dry area, such as a clean, well-bedded stall, or small dry paddock with the bandage removed and changed daily. After the first 48 hours, antiseptic compounds and clean bandaging will generally suffice until the drainage stops and the wound is dry, however, the horse should remain in a clean, dry area.

Multiple, daily warm water and Epsom salt soaks were previously considered an important part of therapy; however, it has been found that excessive soaking only further weakens the hoof and may have negative effects. Tap water soaks do help moisturize the sole, however, a veterinarian may recommend occasional foot soaks to encourage drainage. Phenylbutazone, firocoxib (Equioxx), or banamine may be prescribed if needed for pain relief

or swelling control. The hoof bandage should remain in place until the drainage stops, the hole is dry, and the lameness is gone.

To prevent future hoof abscesses:

- Maintain a clean, dry environment with routine stall cleaning and manure removal from paddocks.
- If extreme changes in weather conditions are expected, hoof hardeners can be applied to protect the hoof wall from too much moisture, and dressings such as pine tar can be used to hold in moisture during drought.
- Routine farrier care is important to maintain good hoof quality and strength.
- Remove any nails, farm implements, metal pieces, and glass from the environment to minimize the risk of trauma.

Research Update - Composting

Summarized by: Krishona Martinson, PhD, Univ. of Minn.

Caring for a single horse may result in more than 10 tons of waste (manure plus bedding) material annually. Composting of this waste material is a handling technique for small equine operations and it provides many benefits including reduced haulage requirements, significant reductions in mass, and increased nutrient concentrations. The objectives of this study, carried out by Rutgers University in New Jersey, was to compare four of the most common bedding materials used by equine operations on the chemical and physical characteristics of composted equine stall waste.

Groups of three horses were bedded on one of four different bedding types, including wood shavings, pelletized wood materials, long straw, and pelletized straw, for

16 hour per day for 18 days. Stalls were cleaned by trained staff daily and all contents removed was weighed and stored separately by bedding material on a level covered concrete pad for the duration study. Compost piles were constructed using piles of each bedding and each pile was equipped with a temperature sensor and data logger. Water was added and piles were turned weekly throughout the 100 day compost process. Initial and final samples were taken, dried and analyzed for dry matter mass, organic matter, inorganic nitrogen and soluble nutrients.

No significant temperature differences were observed among the bedding materials. The composting process resulted in significant reductions in dry matter mass for each of the four bedding

materials. The composting process resulted in significant reductions in organic matter and the carbon to nitrogen ratio for all four bedding materials. The composted long straw material had higher concentrations of nitrogen than the composted wood shavings.

This study demonstrated that incorporating a simple aerobic composting system may greatly reduce the overall volume of manure and yield a material that is beneficial for land application in pasture based systems. The straw based materials may be better suited for composting and subsequent land application; however, factors such as suitability of the bedding material for equine use, material cost, labor, and availability must be considered when selecting a bedding material.