



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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## Research Update: Managing Laminitis

Excessive bodyweight has become a major health issue in the equine industry. Obesity can contribute to other diseases, including Equine Metabolic Syndrome, laminitis and insulin resistance. Therefore, researchers from Auburn University recently explored methods of rehabilitation used to manage obese horses with laminitis.

Clinical data from 14 similar laminitis cases were analyzed to evaluate responses to rehabilitation after 5 to 20 months of treatment. Each horse presented as obese and laminitic with no history of a systemic inflammatory disease. The rehabilitation method emphasized a mineral-balanced, low nonstructural carbohydrate diet; daily exercise; hoof trimming that minimized hoof wall loading; and sole protection in the form of rubber hoof boots and/or hoof casts.

Coffin bone (distal phalanx) alignment within the hoof capsule was improved, and hoof wall thickness was decreased following treatment. Solar depth was also increased. Reduction of heel (palmar) angle measurements was detected in acutely and chronically affected horses. This treatment effect was greater for horses with chronic laminitis than for horses with acute laminitis. Horses were 5.5 times more likely to be sound post-treatment than before treatment.

Daily exercise, dietary modification, and removal of ground reaction force from the hoof wall were focuses of the rehabilitation program. Hoof care and husbandry as applied to these horses may be an effective method of rehabilitation of horses from obesity-associated laminitis.

*Summarized by Krishona Martinson, PhD, University of Minnesota.*

## Ask the Expert: Purchasing Large Round-Bales

**Question:** I would like to start feeding my horses large round-bales, but I have no idea how many bales to buy. I have 2 average sized horse who would have 24/7 access and the hay. The large round-bales are 4' x 5'. How many should I buy?

**Response:** An average size adult horse (1,000 pounds) will eat about 2.5% of their bodyweight each day or about 25 pounds. For two horses, that would be 50 pounds each day. If you feed large round-bales from October through May (8 months or 240 days), you will need 12,000 pounds of hay for two horses. The average 4' x 5' grass large round-bale should weigh 850 pounds. 12,000 pounds divided by 850 pounds equals 14 large round-bales.

However, two horses might not eat the large round-bale quickly enough and there will probably be some waste from

rainfall/snow. It would be best to place the large round-bale in a covered feeder or inside a lean-to to reduce waste from the environment when feeding only a few horses from a round-bale. Ideally a large round-bale would be consumed within 7 days. This is usually achieved when 4 or more adult horses feed from a large round-bale.

Also, we know that large round-bale feeders can help reduce hay waste. Hay waste from large round-bales feed in differed feeders ranged from 6 to 33% waste, while not using a feeder resulted in 57% waste. For more information on selecting a round-bale feeder, click [here](#). Considering waste associated with feeding large round-bales, I would recommend buying 16 large round-bales for your two adult horses for the winter months. *By: Krishona Martinson, PhD, Univ. of Minn.*

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### Upcoming Events

#### Regional Horse Owner Program

November 6, 2014

6:00 to 8:30 pm

Bluff Country Equine

29161 Wilson Frontage Rd.

Winona, MN

Visit our [Facebook](#) page for "Research Update Monday", "Tip of the Week Wednesday" and "Friday Funny"

#### Looking for a "speaker" for your next equine function?

Use our free, recorded webinar library!

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

#### Check out our Apps!

"Hay Price Calculator"

converts price per bale to price per ton. "Healthy Horse" estimates a horses body weight, ideal body weight, and body weight score using new research-based equations. Both are available for Apple and Android devices for a small fee.

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## Frost Concerns

By: Krishona Martinson, PhD, University of Minnesota

Some deciduous leaves can be toxic after they have wilted due to broken branches, fall leaf shed, or storm damage. Leaves of greatest concern for horses are wilted maples. Identify areas of high leaf shed, and remove the leaves or keep horses from the fallen leaves for at least 30 days. Even though wilted maple leaves

are not commonly eaten, horses can accidentally ingest them, especially if hungry.

Frost damaged legume and grass pastures can have higher concentrations of nonstructural carbohydrates (i.e. sugars), leading to an increase in potential for founder and colic. To reduce the chance of adverse

health effects, it is recommended that horse owners wait up to a week before turning horses back onto a pasture after the first killing frost.

Due to damaging hoof traffic on the frozen ground, it is not recommended to give horses access to pastures over the winter months.

## Barn Fire Safety

By: B. Wieland, University of Minnesota and J. Shutske, PhD, University of Wisconsin

As winter approaches and horse owners begin to close up barns, fire safety should be reviewed. Fire is caused when any type of "fuel" meets an "ignition" source. Hay and bedding material are common examples of fuel. Smoking, faulty electrical wiring, and improperly cured hay are common sources of ignition. The key is to minimize the potential for fuel and ignition sources to come together. Often, this is a matter of basic housekeeping. Here are some tips to help reduce your chance of a barn fire.

**Identify all potential ignition sources**, and take steps to eliminate them. For example, smoking should never be allowed on a property with horses. Electrical wiring must be done by a qualified electrician and inspected by a local building inspector. Lightning protection systems must be installed to code and maintained. Do not use extension cords except for short-term uses such as powering a tool or heating a water tank. Make sure heating systems are properly installed and maintained. Store/buy hay only at the correct moisture (<17% moisture) and check its condition frequently. Hay over 25% moisture poses the threat of

combustion. Commercially available hay temperature probes can be used to check the internal temperature of hay bales (the internal temperatures should be below 130° F).

**Take a close look at all potential ignition and fuel sources** and how they might come together to start a fire. Take specific actions to separate these hazards. An example is a heat lamp located over bedding materials or any type of flammable surface. Liquid fuels should be stored in protected locations.

**Look for immediate steps** you can take. Things like "No Smoking" signs posted in barns and hay storage areas are not expensive and are effective if enforced.

**Check wiring for obvious problems.** Make sure no bare wires are exposed. Look for marks on the wire that indicate heating or arcing. DO NOT overload circuits. If you blow breakers or fuses, investigate and correct the problem. Do not use extension cords to replace or fix electrical wiring. Extension cords are a major fire hazard and can lead to an electrocuted animal or person. Make sure electrical motors on ventilation fans, heaters, and other equipment are well-maintained.

**Separate hay and bedding from the livestock.** Most insurance

companies will only allow a small amount of hay to be stored in the same building as animals or require the installation of a firewall between where horses are housed and forage storage areas. Make sure that the areas around barns and other outbuildings are kept clear of brush, shrubs, woodpiles, and other materials that could feed a fire.

**Install and frequently inspect fire extinguishers.** Your insurer can advise you on the best type of portable fire extinguishers or fire sprinkling systems to install. Fires in hay or in wood structures will require large amounts of water.

**Develop an emergency plan and post it in the barn.** Everyone must know how and when to evacuate the barn, how the animals will be removed, and who does what. Go over this plan with everyone including family members, employees, and boarders. All buildings must have multiple unblocked exits that people and animals can get out of quickly.

**Check local building codes and fire safety regulations.** For more information contact your local city hall and visit with a city/township building inspector who can provide additional resources.