



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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## Ration Balancer: What is it and when to use it

Ration balancers are commercially prepared horse feeds that are designed to provide the trace minerals and vitamins a horse requires. The minerals and vitamins are concentrated so that only a small amount of the ration balancer needs to be fed, typically 1 to 2 pounds a day for a 1,000 pound horse, depending on the product.

Ration balancers are commonly fed when a horse can meet its energy/calorie needs by consuming forages (i.e. pasture and/or hay). For example, if you have a horse that has access to a round bale of hay and is able to maintain its body weight on hay alone, then a ration balancer would be an excellent choice to provide the vitamins and minerals not found in sufficient quantities in the hay. Another example would be when a horse is fed hay and also supplemental cereal grains (i.e. oats, corn) in order to meet the horse's energy/caloric needs. In that case, the addition of a ration balancer would be warranted since cereal grains are also not good sources of the required trace minerals and vitamins a horse needs.

So when wouldn't someone need to feed a ration balancer? If you are feeding your horse a commercially prepared feedstuff that is designed to provide all of the essential vitamins and trace minerals **AND** you are feeding it according to the manufacturer's recommendations, a ration balancer would not be needed. Commercially prepared feeds are formulated such that the trace minerals and vitamins are provided as long as the product is fed according to the directions; the amount that needs to be fed is listed

on the feed tag or feed bag. Keep in mind that you must match the commercially prepared feedstuff to the type of horse you are feeding. For example, a performance horse should be fed a feed prepared for a performance horse while a broodmare should be fed a feed prepared for a broodmare. However, if you do not feed according to the manufacturers recommendations and reduce the amount fed, the energy content of your horse's diet will be reduced, but you will also reduce the amount of trace minerals and vitamins the horse is consuming. In that circumstance, the horse's diet would now be deficient in those trace minerals and vitamins. Not following the manufactures instructions are common when people are trying to cut costs or if a horse starts gaining excess weight.

If you decide that feeding a ration balancer is appropriate for your horse, how do you choose which one to feed? There are two basic types of ration balancers. One is designed to be fed with grass hay or a grass legume (i.e. alfalfa, clover) mix, and the other type is designed to be fed with legume hay. Choose the ration balancer that best matches the type of hay you are feeding. When feeding a ration balancer, keep in mind that you will want to follow the manufacturer's recommendations. While the cost may seem higher compared to other types of commercially prepared horse feeds (on a pound per pound basis), keep in mind that you will be feeding much less each day. Calculate the cost per day for an accurate comparison.

*Author: Marcia Hathaway, PhD, University of Minnesota*

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### Upcoming Events

**Unwanted Horse Summit**  
Saturday, March 8, 2014  
9:30 am – 4:30 pm  
Leatherdale Equine Center  
St. Paul, MN  
\$25 registration fee  
Registration available at:  
[www.regonline.com/UnwantedHorseSummit](http://www.regonline.com/UnwantedHorseSummit)

**Lunch and Learn Webinar**  
Wednesday, March 12th  
Noon to 1:00 pm  
"Managing Horses During  
Hot Weather"  
To join, log onto  
<https://umconnect.umn.edu/hothorse/>

**Hay Price Calculator App**  
is now available for Android users in the Google Play Store! Search "umn.edu.haypricecalc" to download the app. The app costs \$0.99 and funds help support equine research at the U of M.

**Healthy Horse App**  
"Healthy Horse" estimates a horses body weight, ideal body weight, and a body weight score using new research-based equations. The app is available in iTunes for \$1.99. An Android version will be available in February 2014.

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## Research Update: Bandaging, Healing, and Proud Flesh

Many horse owners fear limb injuries, not only because of potential lameness issues, but because of the intense care that usually accompanies them. Recently, two studies investigated the use of different ointments and/or bandaging strategies in wound healing and granulation tissue (i.e. proud flesh) formation in limbs.

Researchers in Virginia set out to determine whether povidone iodine ointment or two forms of silver sulfadiazine applied topically to wounds on horse limbs affected the rate healing and the influence of bandaging on proud flesh formation. Six healthy adult horses were used. Six standardized skin wounds per horse were distributed between the dorsomedial surfaces of the metacarpi and metatarsi. One of the following 6 treatments was applied to each wound: 1% silver sulfadiazine cream with bandage, 1% silver sulfadiazine slow-release matrix with bandage, 1% silver sulfadiazine slow-release matrix without bandage, povidone-iodine ointment with bandage,

untreated control with bandage, and untreated control without bandage. Wound area, proud flesh area, and perimeter were measured using digital images, and proud flesh was removed when present. Days until healing, rate of healing, rate of contraction, and epithelialization were compared among wound treatment groups.

Healing parameters did not differ among any of the wound treatment groups. All bandaged wounds produced proud flesh tissue, which was surgically removed; none of the un-bandaged wounds produced proud flesh tissue. When the proud flesh tissue was removed, rates of healing were not different among wound treatment groups, whether bandaged or un-bandaged.

In a separate study, researchers from Australia came to a similar conclusion. Their objective was to evaluate the effect of a non-occlusive dressing incorporated in a 3-layer bandage on limb wound healing. Seventeen horses were bandaged with a non-occlusive dressing covered by gauze-coated

cotton wool that was compressed with adhesive tape, while 16 horses were left un-bandaged. Standardised wounds were made on the skin overlying the dorsomedial aspect of the mid-metacarpus. Wounds were photographed weekly for nine weeks and the images were analyzed electronically.

There were significant effects associated with bandaging. In bandaged wounds, proud flesh tissue required regular trimming, but not in un-bandaged wounds. There was no difference between groups in the total days to healing or the overall rate of healing. If excessive granulation tissue was excised regularly, bandaging had no effect on total time to healing.

Both studies concluded that bandaging limb wounds resulted in the formation of proud flesh. However, if the proud flesh was removed, bandaging (or not bandaging) had no effect on total time to healing.

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

## Ask the Expert: PSSM and Moldy Hay

**Question:** I board my 4 year old quarter horse who has polysaccharide storage myopathy (PSSM). He is on pasture board with one other horse and they have access to a round bale. Last week the bale was new; this week it is the same bale and has been snowed and rained on and is now full of dust and mold. I know mold is bad, but is it worse for my horse since he also has PSSM? In 2013, he had four major PSSM episodes.

**Response:** Moldy hay is bad (and

possibly deadly) for any horse and should not be fed. Horses ingesting moldy hay are at higher risk of respiratory disease and colic. If only 2 horses are eating off the round-bale, it would be best if it was covered by a feeder or placed inside a shed or lean-to to help reduce the negative effects of weather. Ideally, the round-bale would be consumed quickly enough so it would not mold during adverse weather.

Encourage the barn manager or owner to remove the moldy hay

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

and take steps to avoid mold formation in the future.

Because the horse has PSSM, work with a nutritionist to ensure his diet (hay, grain, and treats) is at or less than 10% non-structural carbohydrates (NSC). Research from the University of Minnesota has shown that horses with PSSM respond better to diets lower in NSC. This, along with regular exercise (as long as its approved by your veterinarian), should help reduce the number and severity of his PSSM attacks.