



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Ask the Expert: Fodder for Horses

Question: This year, hay has been difficult to find and is more expensive than in past years. We are considering putting in a fodder system to feed our 30 draft horses. We were wondering if you had any information on this system.

Response: Hydroponically grown forage (or fodder) has become a new hot topic among livestock producers. There are several companies that are aggressively marketing these systems. With hydroponics, plants can be grown in a small amount of water on a mat with added nutrients, but without soil.

With hydroponics, forage is grown in a greenhouse and growth is usually fast. Harvesting can occur in as little as 7 to 10 days. Hydroponic growing systems have been specifically developed to sprout small grains and legumes, with most systems using barley. When the forage is grown, producers simply roll it up like a roll of sod (sprouted grass and roots) and feed it to livestock.

Many experts do not believe that hydroponically grown fodder is economical, especially if labor is figured into the total cost. Livestock owners should consider the following, the cost of the system to grow about 1,000 pounds of feed per day is over \$45,000. This amount is what is needed to supply 36 pounds of dry matter to a herd of about 30 draft horses (assuming an 1,800 pound draft horse fed 2% of their bodyweight). The system is also labor and time intensive. Producers must consider the seed, disposable equipment, facility, fertilizer, heat, light, depreciation, and labor cost when deciding whether to grow fodder.

From the composition of the end product, it appears that little additional tonnage is added from growth of the small grain. The final dry weight is about the same as the grain seed weight. In

some cases, dry matter is actually lost due to the respiration occurring during the early germination process. Many experts are concerned that the production of fodder adds nothing more than water, and that the nutrient and mineral content of the fodder (on a dry matter basis) is about the same as the barley seed used. The final fodder product is essentially a concentrate, not a forage due to the low amount of fiber. Therefore, additional forage would have to be fed to meet the fiber needs of horses and other livestock. Finally, fodder is about 90% water, so a significant amount will need to be fed to meet the horses dry matter requirement.

Since a greenhouse, or similar structure, will be needed to produce fodder, there will likely be a learning curve in producing it. Producers are not likely to start with optimal production yields which can top 1,000 pound daily. Several conditions including outside air temperature (i.e. too hot or too cold) may reduce inside growth. When calculating the potential productivity of a fodder system, the local weather conditions must be taken into consideration.

Even with high current hay prices, the most economical forage for livestock owners in the Midwest is legume and grass pasture and hay. This is true even in a drought year, and certainly in years when hay prices are more moderate. To help ride out high hay prices, have a good working relationship with a hay supplier to ensure a consistent and reliable source of hay; consider adding hay storage to reduce the effects of price and seasonal fluctuations; buy hay early, do not wait until later summer or fall; and finally, try and budget for the price increase.

By: Dan Undersander, PhD, University of Wisconsin and Krishona Martinson, 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

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 horse's 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 early 2014.

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Research Update: Risk Factors Affecting Horses Welfare

Horses are used for a wide variety of purposes, from being used for recreational purposes to competing at an international level. With these different uses, horses have to adapt to numerous challenges and changes in their environment, which can be a challenge in continuously safeguarding their welfare. The objective of this study, conducted in the Netherlands, was to assess the prevalence of health disorders with clinical examination and identify possible risk factors of health disorders affecting horse welfare in horses in the Netherlands.

With the use of fixed protocols for recording health aspects in horses, 150 horse farms voluntarily participating in the study were evaluated by trained assessors. On each farm, 20 horses were clinically

examined; in total, almost 3000 animals. The study recorded (based on clinical examinations) information on the respiratory system (abnormal breathing: 1%, coughing: 1%, nasal discharge: 2%), body condition (19% were fat and 6% were in poor body condition), locomotion (14.5% exhibited irregularity of locomotion and 5% were lame), back palpation (23% had a light response and 8% had a moderate to severe response), mouth (irregularities on mouth corners were found in 3%, while 3% had bars), and ocular discharge was found in 12%.

Statistical analysis found several risk factors for health aspects. Horses used for instruction (i.e. riding lessons) were almost two times more at risk to develop moderate to severe back pain

compared to horses used for recreation or for competition. Horses used for instruction, breeding, or recreation all had a higher risk for irregular locomotion or lameness compared to competition horses. Horses used for recreation were more prone to have a higher body condition score compared to horses used for breeding and instruction.

These results may provide the basis for horse welfare and health programs on farm in the Netherlands and beyond. With the development of a valid welfare monitoring system for the horse industry, the welfare of horses can be increased through improving awareness and changes in management.

Summarized by: Krishona Martinson, PhD, University of Minnesota

Equine Vaccinations

By: Julie Wilson, DVM, MN Board of Veterinary Medicine

Great horse health care programs include a strong focus on prevention of infectious diseases. This topic should be discussed with your veterinarian at least annually to optimize vaccination for your horse and your farm.

Conventional strategies for vaccinating horses have been recently reviewed and updated by the American Association of Equine Practitioners (AAEP). All adult, healthy horses should be vaccinated against Eastern (EEE) and Western Equine Encephalomyelitis (WEE), West Nile virus, tetanus and rabies. EEE and WEE is also known as sleeping sickness. Since EEE, WEE and West Nile are spread by mosquitoes, these vaccines should be administered annually in the spring before mosquitoes emerge,

usually at the time of the annual physical examination. If mosquito populations are high in the late summer, veterinarians may recommend an additional booster for EEE, WEE and WNV. Rabies vaccination is recommended once a year and must be administered by a veterinarian. Tetanus is also administered once a year, unless a horse sustains a wound more than 6 months after the last tetanus vaccination, at which point it should receive another tetanus booster. If the vaccination history of the horse is unknown at the time of injury, a dose of tetanus anti-toxin should be given as well as a tetanus toxoid.

Beyond these core vaccines, many vaccines are available for other equine infectious diseases. Discuss your plans for your horse in

the year ahead with your veterinarian, and realistically look at the degree of traffic on the farm where the horse lives. This information determines the risk of exposure to infectious diseases, which vaccine product would be best, and how often it should be given. This disease discussion should include influenza, rhinopneumonitis (herpes 1 & 4), strangles, and equine viral arteritis (EVA).

If you are planning to show or race the horse, there may be specific vaccination requirements at the show venue or racetrack that must be followed as well.

For more information, visit our online factsheet about [Equine Vaccinations](#).