



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

Visit our Website at: [www.extension.umn.edu/horse](http://www.extension.umn.edu/horse) for more information and to subscribe to the newsletter.

Volume 5, Issue 11

May 2014



## Dry Lot and Shelter Size Recommendations

When planning a horse facility and/or pasture, it is important to consider dry lot or sacrifice paddock size and shelter needs.

Dry lots provide an opportunity to move horses off the pasture during winter months, wet or dry times, and/or time of needed pasture rest. Dry lots are necessary in a rotational grazing system.

Dry lots can vary in size but should provide a minimum of 400 square feet per horse. You also need to account for hay and grain, feeders water sources, and shelter space. Also, 400 square feet assumes the horses in the dry lot get along with each other.

A three-sided shed or lean-to can provide adequate shelter for a horse. A 12' by 12' lean-to can accommodate 1 to 2 horses. As horse numbers increase, run-in shed dimensions should increase by 12 feet per horse.

For example, if you have 3 to 4 horses, a 12' x 24' lean-to would be sufficient. With 5 to 6 horses, a 12' x 48' lean-to would be needed (or two 12' x 24' shelters) Again, these recommendations assume all horses utilizing the shelter get along with each other.

*Author: Krishona Martinson, PhD, University of Minnesota*

## Research Update: Teff Grass for Grazing Horses

The warm season annual grass Teff is native to Ethiopia and recognized for drought tolerance, low nitrogen requirement, and productivity in marginal soils. To determine the value of Teff grass as a horse pasture, a single plot was established with minimum preparation to a predominantly barren hill side within a larger, established pasture in Virginia.

The grazing trial began 54 days after the initial planting, when forage had attained the proper grazing height. Within a 23 day time frame, the Teff paddock was grazed during 4 weekly periods by two groups of horses. The groups grazed at different times within 24 hours of each other. Horses were allowed to graze for 1 hour. During the grazing of each group, forage samples were randomly harvested throughout the plot, clipping the Teff to 4". After about 30 minutes of each grazing event, the horses were approached and samples of the long forage were grabbed as the horses began to chew the forage bites. "Stolen" samples were collected from each horse as they grazed for approximately 10 minutes. All samples

were analyzed for dry matter (DM), crude protein (CP), neutral detergent fiber (NDF), and acid detergent fiber (ADF). Although Teff was a novel grass (i.e. the horses had never grazed the grass) to the horses in this study, all groups grazed the novel forage within 5 minutes of entering the paddock and tended to bite only the upper portion of the plants.

Nutritional data indicated CP did not vary significantly between grazing period, averaging 9% CP for clipped samples. The stolen forage showed higher levels of CP, averaging around 12% CP. NDF averaged 64% in the first two periods, but increased to an average of 65% in the last two periods. NDF was not different between clipped and stolen samples. To the horses in this study, the novel, tall Teff grass was readily acceptable and the upper part of the plant selected by the horses was higher in CP. Further investigation is warranted to determine the value of Teff under greater grazing pressure from horses.

*Summarized by Shanna Privatsky, University of Minnesota*

### Inside This Issue

Dry Lot and Shelter Size Recommendations	1
Research Update: Teff Grass	1
Ask the Expert: Grazing Alfalfa	2
Fertilizing a Horse	2

### Upcoming Events

#### **Equine Pasture**

#### **Management Program**

One farm visit and a customized pasture and grazing management plan.

Registration open from April 1 through August 1.

\$650 per farm. To register: [www.regonline.com/EquinePastureManag2014](http://www.regonline.com/EquinePastureManag2014)

#### **MNHWC 6th Annual Free Equine Castration Clinic**

Stallion owners must be referred based on an economic hardship.

Saturday, May 10, 2015  
Cambridge, MN

For appointments, contact Krishona at 612-625-6776

#### **Lunch and Learn Webinar** Wednesday, June 11, 2014

"Establishing a Horse Pasture" presented by Krishona Martinson, PhD

#### **Minnesota Nutrition Conference**

September 17 -18, 2014  
Mystic Lake Casino  
Prior Lake, MN

For more information, visit [www.mnnutritionconf.umn.edu](http://www.mnnutritionconf.umn.edu)

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



## Ask the Expert: Grazing Alfalfa

By: Krishona Martinson, PhD, University of Minnesota

**Question:** I just bought a farm and the pasture has had grass and alfalfa in it for the past 10 years. Should I be concerned about grazing the alfalfa? I've heard horses should not graze alfalfa.

**Response:** Horses can graze alfalfa. However, the major issue with pasturing horses in a mixed alfalfa grass pasture is the possibility of excessive weight gain. Even an all grass pasture can have excessive energy for adult horses at maintenance and light work, adding in alfalfa provides even more energy.

As with any pasture, introduce

horses slowly and delay grazing until forages reach 6 to 8" in height to optimize both the health of the horses and pasture. When pastures reach 6 to 8", begin grazing for 15 minutes, increasing the grazing time each day by 15 minutes until 4 to 5 hours of consecutive grazing is reached. After that, unrestricted or continuous grazing can resume.

Alfalfa is not as tolerant to frequent grazing and mowing compared to cool-season grasses (i.e. orchardgrass, brome grass, bluegrass). It is likely that over time and with good pasture management, the alfalfa will

continue to thin and the grasses will continue to thicken.

There are a few things you can do to if your horse(s) start gaining weight. Keep an eye on body condition score. Adult horse body condition score should not exceed 6 (out of the 9 point Henneke scale). If horses start putting on excessive body weight, use a grazing muzzle or restrict grazing to 6 to 8 hours a day (without feeding additional hay).

Finally, if any of your horses are hard keepers or have elevated nutritional needs, the mixed grass-alfalfa pasture will be ideal.

## Fertilizing Horse Pastures

By: Krishona Martinson, PhD, University of Minnesota

Proper soil fertility is one of the key factors in maximizing forage production in pastures. Soil testing every 3 years is necessary to identify nutrient deficiencies. While important to supply the plant with nutrients necessary for growth, the application of excess nutrients can be expensive and may lead to environmental pollution. Several laboratories offer soil analysis, including the Univ. of Minnesota (<http://soiltest.cfans.umn.edu>).

Plants have specific nutrient requirements for growth. Without these nutrients, plant productivity can be significantly reduced. Of the nutrients required by plants, some are required in greater amounts and are referred to as macronutrients. Macronutrients include, but are not limited to, nitrogen (N), phosphorus (P), and potassium (K). Recommendations for P and K are based on soil nutrient analysis and are specific to each pasture. Basic soil tests do not measure soil N because of its rapid mobility in the soil. Therefore, N recommendations for grass pastures in Minnesota are

90 pound of N/acre per year. This amount of N is needed every year, while P and K needs will depend on soil analysis results.

By law, the nutrient content of fertilizers must be listed on the packaging. This information is often listed in the form of a three number code. For example, a product labeled as 10-20-5 would contain 10% N, 20% P<sub>2</sub>O<sub>5</sub> (phosphorus) and 5% K<sub>2</sub>O. (potassium) Spreading 50 lbs of this product per acre would result in an application of 5 lbs N (50 lbs x 0.10 = 5 lb), 10 lbs P<sub>2</sub>O<sub>5</sub>, and 2.5 lbs K<sub>2</sub>O per acre.

The timing of fertilizer application should match the growth pattern of the forage, making nutrients available to the plants when they're most needed. Cool season grasses (i.e. bluegrass, orchardgrass, brome grass) and legumes (i.e. alfalfa, clover) growth is greatest during the spring and fall; therefore, a split application is recommended.

Fertilizer application in early spring (i.e. April/May) helps boost summer production, while application in

early summer (i.e. mid-June) helps boost fall production. For split applications, it is recommended to divide the total amount of fertilizer needed into two applications, applying half in spring and the remaining half in early summer.

Granular fertilizer is typically spread using a broadcast spreader. For smaller pastures, walk-behind spreaders or those pulled by a garden tractor or attached to an ATV are ideal. It's best to apply fertilizer just prior to a light rain to help dissolve the fertilizer and move it into the plant root zone. Fertilizer should not be spread in areas with standing water or near lakes, ponds or streams.

Following application, it will be necessary to restrict horse access to the fertilized pasture to prevent horses from inadvertently consuming the fertilizer. Restrict horse access until at least ½ inch of rainfall has fallen, for 2-3 weeks (in the absence of rainfall), or until the fertilizer is no longer visible on the soil surface. Once the fertilizer is no longer visible, it is safe to resume grazing.