



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Equine Gastric Ulcer Syndrome By: Micah Bishop, DVM, U of M

What is EGUS and what is its cause? Equine Gastric Ulcer Syndrome is a complex multi-factorial disease that is not completely understood. There are many theories that have implicated stress, NSAID use (phenylbutazone & banamine), housing, exercise, and diet as risk factors. It is highly likely that all these factors contribute to development of EGUS.

Are there different types of ulcers? Equine gastric ulcers fall into one of two main categories; squamous or glandular. The horse stomach is divided into two compartments; the part closest to the opening of the esophagus is squamous section. This section is covered by squamous (skin like) cells that do not produce stomach acid. Nearly 80% of ulcers are found in this region. The other section is the glandular portion. This section contains the cells that secrete hydrochloric acid which is essential for

digestion of food. **What are the clinical signs of gastric ulcers in adult horses?** Clinical signs of ulcers can be somewhat vague in adults. These may include acute or recurrent colic (particularly after eating), loss of body condition, performance issues, changes in attitude, and frequent recumbency. With gastric ulcers a horse may be reluctant to eat grain or may take more time than usual to eat the grain. Gastric ulcers also occur secondarily to many conditions and horses are often placed on preventative (lower) or treatment (higher) doses during hospitalization. **How are gastric ulcers diagnosed?** The most accurate method to diagnose gastric ulceration is by flexible endoscopy of the stomach. In this procedure, a 3 meter fiber optic scope is placed in the horse's nose and passed through the esophagus in order to visualize the stomach. Many horses tolerate this procedure very well and side effects are rare.

How should my horse be prepared for endoscopy? Your horse needs to have food withdrawn for a minimum of 12 hours and most clinicians prefer water taken away 3 to 4 hours prior to the procedure. This enables better visualization of the stomach. Some horses may require an additional fasting period. **What is the treatment for gastric ulcers?** Depending on severity and clinician preference, horses are often placed on either omeprazole (Gastroguard®) or ranitidine. These drugs work by inhibiting acid secretion in the stomach and consequently raising gastric pH. Unfortunately, due to breakdown of the active ingredient, the formulation of omeprazole is critically important and generic or compounded omeprazole is usually not effective. Treatment generally is for a month. Recheck endoscopy can help determine if further treatment is needed.

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Up Coming Events Pasture Management Class

October 5th, 5:30 to 8:30 pm
Delano Middle School
Contact Brenda at 763-682-7381 for more info.

Regional Horse Owner Programs

February 10th - St. Paul
February 17th - Crookston
February 24th - Rochester
March 10th - Foley
March 24th - Cloquet
Register on-line at: www.cvm.umn.edu/outreach

Plants Poisonous and Harmful to Horses Poster

Cost: \$25.00
Contact Kristi for more info at 763-767-3837 or marti987@umn.edu

Ask The Expert

By: Krishona Martinson, PhD, U of M

Q: Is it recommended to keep horses on pasture once the ground has frozen and there is snow cover?

A: We do not recommend keeping horses on pasture over winter. There is minimal nutritional value in the dormant/dead grass and legumes. Hoof traffic and continuous grazing can cause considerable damage, which can result in weak plants or bare spots in the pasture the following spring and summer. Also, some poisonous plant skeletons, like white snakeroot, can remain above the snowline, tempting horses to ingest them. During winter months, keep horses in a sacrifice area where they are fed hay, have water and shelter. As a guideline, turn horses back into the pasture the following spring after the pasture dries out and grasses and forages are between 6 - 8" tall.



Frost Effect on Plants

By: Krishona Martinson, PhD, U of M

Some deciduous leaves can be deadly after a frost or after they have wilted due to broken branches, fall leaf shed or storm damage. Leaves that tend to be most toxic are those of red maple and cherry trees. Identify all such seasonally toxic trees on your property, and keep

horses from their fallen or frost damaged leaves for at least 30 days. Even though these leaves are not commonly eaten, horses can accidentally ingest them, especially if hungry or bored. Nitrate toxicity can also be an issue after frost with some nitrate-

accumulating plants. Generally, this is only a concern with some grass species where high nitrogen has been used and with some weeds that are known to be nitrate accumulators like lambsquarter and pigweed. It is recommended that horse owners wait up

to a week after a killing frost before grazing areas where nitrate toxicity is a concern. Prussic acid accumulation can also be an issue after a frost with some specific warm-season annual grasses like sorghum and sudan grasses, but these grasses aren't commonly grazed by horses or fed in horse quality hay.

Research Update: Equine Grazing Preference

By: Gary Wilson, Ohio State Univ.

Horses have long been known to be selective grazers. Horse pastures often have uneven patches of both over-grazed and under-grazed grasses. Do horses prefer different species or varieties of grass? To answer this question, a horse grazing study was conducted in Ohio. Four different grass varieties; 'Tetraplus' perennial ryegrass, 'Cambia' orchardgrass, 'Tekapo' orchardgrass and 'Duo' festulolium were evaluated. The grasses were planted in a quadrant pattern in three replications in 1/3 acre

paddocks. The goal of the study was to have spring, summer and fall grazing periods with two horses per paddock, observed for one hour in the morning and one hour in the afternoon, and recording every 5 minutes which quadrant the horses were grazing. During June morning grazing, the horses appeared to equally graze all four varieties. During the August and October mornings, the horses preferred the orchardgrasses, followed by festulolium and perennial ryegrass. When all

mornings were combined, the orchardgrass varieties tended to be preferred. During June afternoons, perennial ryegrass and festulolium were preferred, which is opposite of the June morning observations. Perhaps this is because these grasses were not grazed in the morning or there are nutritional differences in these grass species that occur throughout the day. During August afternoon grazing, the horses preferred the orchardgrass varieties followed by perennial ryegrass and

festulolium. When all afternoons were combined, the horses preferred perennial ryegrass, followed by 'Cambia' orchardgrass, festulolium and finally 'Tekapo' orchardgrass. When all the data were combined, the orchardgrasses were preferred, followed by perennial ryegrass and festulolium. Future research to address equine grazing preference and nutritional qualities of grass and legumes will be evaluated at the U of M Equine Center. Watch future newsletters for updates.

1 Hour Grazing Time	% of Five Minute Observations			
	'Cambia' Orchardgrass	'Tetraplus' Perennial Ryegrass	'Tekapo' Orchardgrass	'Duo' Festulolium
June Mornings	29	26	25	21
August Mornings	26	15	41	18
October Mornings	29	12	38	22
Total All Mornings	28	19	33	20
June Afternoons	21	37	17	24
August Afternoons	32	24	25	18
Total All Afternoons	25	32	20	22
Total All Mornings & Afternoons	27	24	28	21