



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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The Importance of Water

By: Marcia Hathaway, PhD, U of M

Horses require a clean, fresh supply of water at all times. If a horse does not get enough water to drink, the results can range from impaction colic to dehydration to death. A 1,000 pound horse, at rest in a cool climate, eating lush pasture needs a minimum of 3 and up to 10 gallons of water to drink each day. If supplemental water isn't provided to horses, the incidence of colic is increased dramatically.

Young horses, pregnant or nursing mares need even more water. Horses can sweat large amounts (2 to 4 gallons of sweat each hour) in order to control their body temperature. A horse that is sweating, whether just from the heat of the summer sun or from working hard, will need more water. With high ambient temperatures, humidity and/or exercise, voluntary water consumption can increase 2 to 4 fold. An exercising 1,000 pound horse in the summer heat could easily need to drink 12 to 16 gallons of

water if it is eating fresh forages and much more if it is being fed dry hay. Some water will be supplied by fresh forage, but not with dried hay.

Horses will drink more when the water offered is clean and between 45° - 64° F. The water trough should be clean, kept out of directed sunlight, and located near a shelter but away from feed sources.

Even though there has been a loss of water and the horse is actually dehydrated, the horse may not necessarily be thirsty. This is the basis for the phrase: "You can lead a horse to water but you can't make him drink"! You should, however, encourage your horse to drink in order to prevent further dehydration. Ideally, dehydration should be avoided completely by allowing a horse that is working opportunities to drink every couple of hours. Although it is a common belief that a hot horse should have water withheld until it is cool, there is no scientific basis to support that belief.

Research Update—Equine Grazing Preference

Cool season grass varieties are being marketed for use in grazing systems, but few are evaluated for palatability under horse grazing. The objective of this research was to evaluate grazing preferences and persistence of twelve cool season grasses under horse grazing.

Research was conducted in St. Paul, MN during the 2010 growing season. Four adult Quarter Horse types were grazed May through October in a cafeteria style grazing trial. Post-grazing grass removal was visually assessed to determine horse preference and percent ground cover was assessed to determine grass persistence.

Timothy, Kentucky bluegrass and quackgrass were most preferred; smooth brome, meadow fescue, tall fescue,

perennial ryegrass, and reed canarygrass were moderately preferred; and orchardgrass, creeping foxtail and meadow brome were not preferred by the horses.

Tall fescue, orchardgrass, and meadow fescue were the most persistent grasses while creeping foxtail and timothy did not persist well under horse grazing. Quackgrass, perennial ryegrass, reed canarygrass, meadow brome, Kentucky bluegrass and smooth brome persisted moderately well.

Mixtures of fescues, bluegrass, brome and ryegrass should persist under grazing while being highly preferred by horses.

Authors: *B. Allen, K. Martinson, PhD and C. Sheaffer, PhD, Univ. of Minn.*

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Upcoming Events

Quarterly Lunch and Learn Webinar

Advances in Equine Genetics

Presented by M. McCue

July 20th at noon

The webinar is free, but registration is required:

www.myhorseuniversity.com/node/550

*In partnership with
MHU and MSU*

Horse Forage Field Day

August 17th 6-8:30 pm

Equine Center

St. Paul, MN

*Research updates,
plant ID, and equine
grazing preference*

Quarterly Lunch and Learn Webinar

Equine Metabolic Syndrome in Ponies

Presented by N. Frank

October 18th - 6:00 pm

Draft Horse Owner Education Program

February 18, 2012

Equine Center

St. Paul Campus

*In partnership with the
2012 Shire National
Meeting*



Heat Stress: Too Hot To Trot?

By: Jenifer Nadeau, PhD University of Connecticut

During hot summer weather, heat can be a concern for horse owners. Horse owners need to provide extra care during hot weather to decrease stress and maintain the health and well being of their horses. Normally, the horse cools itself by sweating. Heat is lost and the body cools as sweat evaporates from the skin's surface. Less moisture evaporation occurs in times of high humidity causing the cooling mechanism to become less efficient. Some horses are anhydrotic, meaning they have little or no ability to produce sweat. These horses are prime candidates for heat stress. The below table can help determine when it is too hot to work a horse.

Common terms for horse overheating include hyperthermia, heat exhaustion, heat cramps, heatstroke or sunstroke. Explanations of the signs associated with each, and treatment options, are listed below:

Hyperthermia or overheating in the horse is due to a disturbance in the heat regulating mechanism of the horse's body that can result from hot weather, high humidity, poor barn

ventilation, prolonged exposure to direct sunlight, excessive work, transportation, or obesity. Some signs of overheating include muscle tremors, profuse sweating, collapse, dark urine, dull expression and behavior, dark mucous membranes, and slow capillary refill. Treatments includes using fans, allowing the horse to have a few swallows of cool, clean, fresh water every few minutes, and calling a veterinarian since the horse may need to receive an intravenous injection of fluids.

Heat exhaustion will cause the horse's temperature to rise to 105 to 109° F, the pulse rate to rise to 50 to 100 beats per minute, and the respiration rate to rise to more than 30 breaths per minute. Normal vital signs of the horse include a temperature of 99.5 to 101.5°F, pulse rate of 28 to 44 beats per minute, and a respiration rate of 8 to 20 breaths per minute. Treatment includes spraying the horse with cool water and moving it to a shady area or cool, well-ventilated barn.

Heat cramps are most commonly found in horses doing hard work in intense heat that are sweating profusely. Signs of heat cramps

include spasms of the abdomen and/or legs, muscle twitching and cramping of the muscles. These occur due to a loss of electrolytes (i.e. severe salt loss). Treatment includes cooling, rubbing down, and giving electrolytes.

Heatstroke or sunstroke is more serious. Horses undergoing prolonged hard or fast work during hot weather, horses exposed to direct sunlight without shade, young, poorly conditioned horses, and horses with long hair coats are susceptible to heatstroke or sunstroke. Signs of heatstroke or sunstroke are rapid breathing, weakness, in-coordination, and refusal to work. Body temperature can increase to 106 to 110°F, sweating stops, and the skin dries.

Prolonged exposure to high temperatures also results in dilation of surface blood vessels. When dilation occurs without an increase in blood volume, circulatory collapse delirium, and convulsions may also occur. Death can occur within a few hours if the horse is not cooled and does not receive emergency veterinary care. Treatments include placing ice packs on the horse's head and large blood vessels on the inside of its legs.

Bottom line: try and avoid working a horse when the combined temperature and relative humidity surpass 150 and watch for signs of heat stress.

Air temperature + relative humidity (° F)	Horse's Cooling Efficacy
Less than 130	Most effective
130-150	Decreases
Greater than 150	Greatly reduced
Greater than 180	Conditions could be fatal if horse is stressed

MN Board of Animal Health Update

By: Bethany Hahn, MN Board of Animal Health

An outbreak of Equine Herpesvirus (EHV-1) was traced to horses that attended the National Cutting Horse Association's Western National Championship in Ogden, Utah from April 30 - May 8, 2011. Horses from 29 states, including

Minnesota, attended the show. No cases of the disease have been found in Minnesota, and all EHV-1 quarantines on exposed Minnesota horses have been released.

Effective May 24, 2011, all horses entering North Dakota for any

length of time will need a Certificate of Veterinary Inspection. A negative coggins test within the last 12 months is also still required. Please call the North Dakota Department of Agriculture at (701) 328-2655 or (800) 242-7535 with questions.