

# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Volume 7, Issue 10

October 2011



## Conformation Continued

By: ADawn Melbye, UM-Crookston

A properly formed front leg will move in straight lines and have less stress on bones, tendons, ligaments and muscle mass. Deviations or crooked front legs can produce stresses and lead to possible lameness. Conformation of the horse's front legs can affect their athletic ability, soundness, stride, speed and agility.

When a horse stands square, the angle of the shoulder blade and upper arm should measure between 40 and 55 degrees. One way to measure this angle is to measure down the center of the shoulder blade to the point of the shoulder, then draw a line across the body. With this angle you should notice the horse's elbow is directly below the front of the withers.

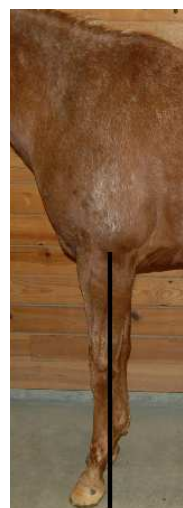
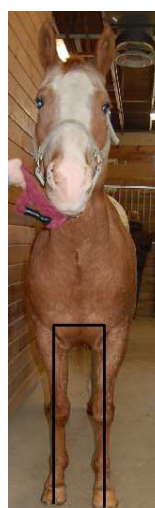
The elbow of the horse should be parallel to the horse's body and not be turned in or out. From the front of the horse, there should be a straight line from

the point of the shoulder down the center of leg, bisecting the forearm, knee, cannon, fetlock joint, pastern and hoof. The cannon bone in the foreleg should be shorter than that of the rear leg. From the side of the front leg, a straight line should be formed in front of the withers to down the center of the front leg and touch at the heel.

The angle of the pastern to the toe should also be measured at 40 to 55 degrees. An adequately sloped hoof will transfer weight from the tendons to the upper leg of the horse, decreasing pressure and maintaining soundness.

Horses with straighter shoulder and pastern angles tend to have shorter strides. However, some disciplines tend to prefer horses with a shorter stride.

Our series on conformation will continue next month with a discussion on hind leg conformation.



## Ask the Expert

By: Krishona Martinson, PhD, University of Minnesota

Q: The oak trees in my pasture have dropped thousands of acorns. I've read that acorns are toxic, what should I do?

A: Oak leaf buds and immature (green) acorn hulls are associated with horse toxicity. Mature (brown) acorns are not known to be toxic. If the acorns in

your pasture are mature (brown), then there is no risk of toxicity. If the acorns are immature (green), then you must keep the horses off the pasture until the green acorns have been removed. For more information on oak toxicity, visit

[www.extension.umn.edu/horse/components/pdfs/FactSheets/FS\\_Oak\\_3-8-07.pdf](http://www.extension.umn.edu/horse/components/pdfs/FactSheets/FS_Oak_3-8-07.pdf)

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## Upcoming Events

### Advanced Horse Owner Program

October 15, 2011

St. Paul Campus

To register (\$25):

[www.regonline.com/AdvancedHorse](http://www.regonline.com/AdvancedHorse)

### Quarterly Lunch and Learn Webinar

EMS in Ponies

By Dr. Nick Frank

Tuesday, October 18th

at 6:00 pm (central)

To register (free):

[www.myhorseuniversity.com/node/560](http://www.myhorseuniversity.com/node/560)

### Horse Owner Education Program

November 12, 2011

UM—Crookston

To register (\$25):

[www.regonline.com/FallRegionalHorse](http://www.regonline.com/FallRegionalHorse)

### Draft Horse Owner Education Program

February 18, 2012

St. Paul Campus

To register (\$25):

[www.regonline.com/DraftHorse](http://www.regonline.com/DraftHorse)

### Four State Equine Business Conference

February 25, 2012

St. Paul Campus

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## Purpura Hemorrhagica: A Dangerous Sequel to Strangles

Purpura hemorrhagica is due to a vasculitis (inflammation of the blood vessels) that results from an inappropriate response of the body's immune system. Traditionally, cases of purpura hemorrhagica are associated with previous bouts of strangles. Unlike strangles, purpura is not infective; horses cannot catch purpura from other horses. Cases of purpura have been reported to be associated with other upper respiratory tract bacterial and viral infections.

In cases of purpura, the immune system damages vessel walls, causing them to become leaky. Blood components leak into the tissues, resulting in swelling. The head, legs and underbelly of the horse are most often affected. Hemorrhage into the tissues may occur and may be visible as areas of red spotting on the gums and other mucous membranes. Serum may begin to seep from the skin and, in severe cases, the skin may die and slough off, exposing the tissues beneath. Purpura is not limited to

the skin. The effects extend to wherever blood vessels run, including the lungs, muscles and the kidneys. This body wide involvement can lead to other clinical signs such as lameness, laminitis, colic, weight loss, and neurologic signs.

If a horse has recently had a respiratory tract infection or been recently vaccinated for strangles and signs of purpura are observed, contact a veterinarian. A veterinarian may be able to make a diagnosis based on the history and examination findings. Blood can be checked for high levels of antibodies to *Streptococcus equi* (the strangles bacteria) while the skin, via a biopsy, can be checked for signs of vasculitis.

Treatment involves dampening the immune response and removing the inciting cause. Horses are usually started on dexamethasone, a corticosteroid, which works to suppress the immune reaction. In addition, the horses are often put on antibiotics to eliminate any underlying respiratory infections and

to prevent further infections while they are undergoing immunosuppressive treatment.

Purpura hemorrhagica is difficult to predict and prevent. If a horse has experienced a reaction to the strangles vaccine, a veterinarian may recommend the horse not be administered that vaccine again, at least without further testing. Research has found that horses that have high serum levels of antibodies to *Streptococcus equi* may be at increased risk of developing purpura hemorrhagica. High levels of antibodies are particularly likely when horses have been exposed to strangles and have been vaccinated.

Outcomes of purpura hemorrhagic vary wildly. Many times the disease is mild and horses recover well. Other times, horses are severely affected and may die or are euthanized. Early recognition and treatment of purpura is crucial for a positive outcome.

*Author: Phil Kieffer, Univ. of Minn. Veterinary Student*

## Research Update—The Effect of Water Acidity

Preferred flavors added to food, water, or medications may possibly increase palatability and intake. Although there is some research on certain flavors such as sour, peppermint, and banana, little evidence exists measuring the taste preferences of horses. Researchers at the University of Guelph set out to determine the horse preference or aversion to sourness through alteration of water pH.

Twelve horses were used for the study. All horses received daily turnout with free access to forage and water. Each horse was given a treatment for four consecutive days.

Treatments were fed in identical black buckets and consisted of control water (pH 7.5) and control water plus citric acid with either a pH of 5.0, 3.6, or 2.9 (the lower the pH, the more acidic the water). Citric acid is sometimes used to flavor water for horses. Water buckets were refilled and weighed as necessary to determine total amount of water consumed from each bucket. Treatment intake was calculated as the percentage of total daily fluid intake, and these values were used to determine preference.

Preference and aversion were established as percent intake above

60% and below 40%, respectively. Differences of intake were noted in the buckets with a pH of 3.6 and 2.9 (these groups did not differ from each) whereas a pH of 5.0 was moderately aversive and tended to differ from the control bucket, which the horses most preferred. Although acidic treatments were found to be aversive, no treatment was completely rejected by the horses. However, the buckets with a pH of 2.9 were the least preferred.

In conclusion, the lower the pH of the water the less the horses will consume. *Summarized by: Beth Allen, Univ. of Minn.*