



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Determining the Value of Rained on Hay Cont.

How does rainfall intensity and forage moisture affect losses? Research is conclusive on these two points. Given the same amount of total rainfall, a low intensity, longer rainfall event will result in more leaching of soluble compounds than a high intensity, short rainfall. Also, as forage moisture content declines, it is more prone to dry matter loss from rain. In Wisconsin rainfall studies, the maximum loss in dry matter (54%) was a treatment where 2.5 inches of rain fell on hay that was nearly dried.

How does rainfall affect forage quality? Perhaps nothing is more frustrating than to see excellent quality hay turn into unsuitable feed with each passing rain and subsequent raking. Most rainfall studies are in agreement that wetting of field dried alfalfa has little impact on protein concentration. For rained-on hay, it is common to see relatively high protein values in comparison to fiber concentrations, unless significant leaf loss occurs. With the leaching of water soluble carbohydrates, structural fibers comprise a greater percent of the forage dry matter. Depending on numerous factors, the digestibility of rained-on hay may

decline from 6 to 40%. Changes in fiber components are thought to occur by indirect mechanisms. Fiber components are concentrated when the water soluble carbohydrates are leached from rainfall events. Additional fiber is not made during the wetting process, it is merely concentrated.

Conclusions. Rained on hay can be a suitable forage, but quality depends on several factors. Forage quality tends to be retained if rain occurs soon after cutting when the forage has had minimal time to dry; the rainfall was a single event compared to a multiple day or drawn-out event; rainfall intensity was higher versus a longer, lower intensity event; and the forage was not been re-wetted numerous times.

Rained on hay is actually beneficial for horses prone to laminitis and other metabolic disorders because of its reduced water soluble carbohydrate content. Analyzing forage for nutrient content is recommended, and can be especially useful when determining the quality of rained on hay.

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EHV-1 in U.S. Horses

By: MN Board of Animal Health

An outbreak of Equine Herpesvirus (EHV-1) has been 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.

EHV-1 causes a disease of horses called equine rhinopneumonitis and does not affect humans. EHV-1 usually causes respiratory symptoms with fever, but can also cause abortion, nervous system disease, or death.

The Minnesota Board of Animal Health

is working to quarantine 13 potentially exposed horses in Minnesota. USDA APHIS released the first situation report (May 19) regarding the outbreak at:

www.aphis.usda.gov/vs/nahss/equine/ehv/ehv_2010_sitrep_051911.pdf

Although the majority of Minnesota horses will be unaffected by this outbreak, horses that have aborted or show signs of fever in conjunction with respiratory or neurological disease be isolated from other horses and evaluated by a veterinarian.

For more information on EHV-1, visit www.aphis.usda.gov/vs/nahss/equine/ehv/equine_herpesvirus_brochure_2009.pdf.

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Upcoming Events

Quarterly Lunch and Learn Webinar
Advances in Equine Genetics
Presented by Dr. Molly McCue
Wednesday, July 20th
noon (central time)
Webinar link coming soon

Quarterly Lunch and Learn Webinar
Equine Metabolic Syndrome in Ponies
Presented by Dr. Nick Frank
Tuesday, October 18th
6:00 pm (central time)
Webinar link coming soon

Draft Horse Owner Education Program
February 18, 2012
Leatherdale Equine Center
St. Paul Campus
In partnership with the 2012 Shire National Meeting
Program agenda and registration available
SOON



Management of Premature and Twin Foals

By: Dr. Teixeira, DVM, Univ. of Minn.

In May of 2010, the University of Minnesota admitted twin foals (figure 1). The twins had severe signs of prematurity and septicemia. The foals were kept in the neonatal intensive care unit during their stay and received constant nurse care and therapy, including intravenous nutrition, antibiotic therapy, oxygen, fluid therapy, a blood transfusion, splinting of the legs, and restrict exercised. The foals were discharged 20 days after admission and continue to do well at home.

Figure 1. Twin foals



A normal equine pregnancy lasts 340 to 360 days. Foals born prior to 340 days usually have distinct physical characteristics and are considered premature. Twins and infection and thickening of the placenta and are the most common causes for premature delivery. Premature physical characteristics can also occur in some foals born after 340 days. In this case, the foals are considered dysmature. Dysmature foals may be the result of placental insufficiency, nutritional factors, or often unknown causes. Premature and dysmature foals have very special needs.

Signs of prematurity in foals include low birth weight, domed forehead, floppy ears, silky hair coat, lax tendons and poor muscle development (Figure 2). Often premature /dysmature foals do not have the strength to stand by

themselves. This makes it difficult for them to nurse adequately. When standing, the front knees may seem to sink backwards and the fetlocks may touch the ground.

Figure 2. Floppy ears are a sign of a sick foal.



Premature foals are at very high risk for life threatening complications. Lack of mature lungs means difficulty in getting adequate oxygen and a predisposition to suddenly developing respiratory distress. Because the suckle reflex in premature foals is often weak, they may not get adequate colostrum or nutrients, foals may aspirate milk into the lungs resulting in pneumonia. In addition, important antibodies from colostrum may not be absorbed by an immature gut which further predisposes foals to infection.

Foals need to nurse at least once an hour. Weakness and laxity in the tendons of the limbs may prevent foals from standing for long enough to nurse adequately. If premature/dysmature foals can stand, they may crush immature bones in their front knees and hocks. Crushing these poorly calcification small bones leads to limb deformities, chronic arthritis, and limited future athletic performance.

Even though premature/dysmature foals look bright and nurse well immediately after birth,

their status can change in an instant.

It is critical to recognize the signs of prematurity/dysmaturity at birth. The continuous veterinary care these foals need is beyond the scope of most horse owners. Preventing complications from arising, providing adequate nutrition, and ensuring restricted exercise from the first few hours after birth are key to success. Foals need to be watched for signs of respiratory distress, infection, dehydration, malnutrition, and intestinal dysfunction. Oxygen therapy, broad spectrum antibiotics, intravenous fluids, assistance to nurse hourly, or placement of a feeding tube are common therapies provided for premature/dysmature foals.

Figure 3. Radiographs of both knees of a premature foal showing a decreased ossification of the cuboidal bones.



Radiographs are commonly taken to detect the extent of improper ossification (Figure 3). Support for the legs and restricted time standing can be implemented to try and prevent permanent damage to bones.

Owning a premature foal can be an emotional roller coaster as the foal's status can fluctuate for several weeks until the foal stabilizes.