



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Feeding Clover

By: Mike Murphy, DVM U of M

Clover is a desirable feed source for most horses whether used in pasture or in hay because it provides useful energy and acceptable protein and fiber. Problems may rarely arise with clover, just as they can with most desirable feed sources. Clover may be “too rich” at times for horses. The early rapid growth phase of some clovers, like other forages, may contain high amounts of soluble sugars. The soluble sugar content of the plant will decrease as it matures. These soluble sugars and other carbohydrates are sometimes associated with colitis and founder in horses fed only pasture in the early spring.

Growth of mold on clover is occasionally encountered. Two mold problems are generally associated with the common pasture clovers (red, white and alsike). They are associated with weather above 80°F and humidity above 60%. The most well characterized problem is “slobbers.” Horses can

literally fill several 5 gallon buckets full of saliva in one day. This condition is caused by slaframine, which is produced when red clover is infested with a mold. The mold is generally a rust color seen on the UPPERSIDE of the leaf. This mold normally “runs its course” in 2 to 4 weeks, depending on weather conditions.



White Clover

The second problem in these clovers, Black Blotch Disease, is not quite as well characterized, but has been reported in Minnesota, Washington, and areas of Canada. The mold literally causes black blotches to occur on the UNDERSIDE of the clover leaves, usually closer to the ground where the humidity is higher. Horses ingesting clover with Black Blotch have been known to develop excessive “sunburn,” which is really a thickening and reddening of the white areas of skin due to liver damage. Black haired horses also get the liver damage but the “sunburn” is not visible.



Red Clover

A third mold condition affects a different clover – both white and yellow sweet clover. These clovers are not common in pasture mixes, but are more frequently seen along roadways. The problem arises not from clover in pastures but if sweet clover is harvested for hay AND gets moldy as the hay is baled. Crimping the sweet clover at cutting reduces, but may not entirely eliminate, this problem. An unknown mold converts the naturally occurring cumarol in the sweet clover to dicumerol – a blood thinning drug. Horses may bleed if moldy sweet clover hay is a substantial amount of a horse’s diet over a number of days. Dicumerol clears quickly, so taking the horse off the hay is the best choice. Injections of vitamin K or blood transfusions may be necessary in extreme bleeding situations.

White Sweet Clover



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Up Coming Events

Rotational Grazing Demo
Medina, September 22nd
6:30-8:30 pm
Contact 612-596-1175

October 28th.
Equine Reproduction.
St. Paul Campus
Contact 612-624-2268.

November 1st
Horse Pasture Management
Watertown/Mayer HS
5:30 pm to 8:30 pm.
Contact Aaron at
952-955-0214.

February 11th 2006
Hands-on Horse Day at
the U of M in St. Paul.
Contact 612-624-3434.

February 25, 2006
Horse Owner Education Day
Cambridge, MN
9:30 am - 3:00 pm
Contact 763-767-3837

March 11, 2006
Horse Owner Education Day
Cologne, MN
9:30 am - 3:00 pm
Contact 952-442-4496



Hot weather brings an increased risk of infectious diseases that involve arthropods transmission to horses. Two important diseases in this category are West Nile virus (WNV) and Potomac Horse Fever (PHF). WNV causes neurologic signs and muscle trembling, killing almost a third of the horses that develop signs. Mosquito numbers often soar in late summer, as larvae hatch from warm water pools. These mosquitoes feed on wild birds, spreading WNV between them, and occasionally transmitting the virus to horses and people.

Q: Can I treat my manure pile with anything to help reduce the amount of flies at my barn?

A: Your manure pile may be producing flies, depending on temperature, moisture content, and how long before it is spread. However, flies are likely to be coming from other sources, and spraying the manure pile alone may not produce the

Many cases of colic are due to gas colic or probable impactions. Veterinary treatment usually involves controlling the horse's pain with analgesics, softening the impaction with mineral oil or other laxatives, and encouraging motility by having you walk the horse. In general, horses should not be fed hay or grain until they pass manure and the colic has resolved. If an impaction is present, more food compounds the constipation

Horse Health Update

By: Julie Wilson, DVM U of M

Horse owners can do 3 things to lower the risk of WNV infection: eliminate or treat all standing water in their horse's environment to discourage mosquito hatching, minimize the likelihood of mosquito bites by keeping their horses indoors at prime mosquito feeding times (dawn and dusk) and protected with repellants, and ensure their horses are well vaccinated against WNV. This may include a late summer booster vaccination, in addition to a vaccination in the spring.

PHF cases are also more frequent in late summer, and are characterized by fever, laminitis and often, diarrhea. The causative organism, has been shown to infect flukes that parasitize aquatic snails. In warm water, the bacteria pass out of the snails, and are then picked up by aquatic insects. Horses can be infected by drinking contaminated water, or by ingesting feed that has been contaminated by the insects from the aquatic environments. Many strains of the organism have been

identified, but only one strain is protected against in the vaccine. Vaccination does not prevent the disease but may lessen the severity of the signs. Early treatment with the antibiotic oxytetracycline is more cost effective than vaccination. PHF resembles several other diseases, such as salmonellosis, which is contagious to humans and other animals, so immediate veterinary care and diagnostic testing are strongly recommended.

Ask the Expert

By: Roger Moon, PhD, U of M

desired results. Breeding sites can be located by searching your premise for places where maggots are actively developing, including soiled bedding, feed debris, areas around waterers, etc. Once located, sources can be eliminated by scraping and spreading

the manure, and by preventing manure accumulations from recurring. If stall "pickings" must be piled, then consider composting as an alternative to spraying. For maggot control, you will need to create a hot, actively composting pile, where

temperatures are greater than 140 °F. Fresh manure will need to be mixed with another source of carbon, such as straw or sawdust. If space permits, create a new pile each week, and turn all piles weekly to maintain aerobic conditions.

Colic Treatment

By: Erin Malone, DVM, U of M

the horse is experiencing. Walking and grazing a small amount of grass may help stimulate bowel motility. Most cases of colic will respond to this type of treatment within a few hours. A few horses will need additional fluids for rehydration (oral or intravenously) and may need to be reexamined. If the colic pain is more

severe, requiring intensive treatment, a veterinarian may recommend you take the horse to an equine hospital equipped for intensive care and abdominal surgery. At the hospital, many of the tests will be repeated to assess how the horse has responded to your veterinarian's treatment. Constant monitoring of the horse guides a decision to continue medical treatment or

perform surgery to diagnose and treat the problem. Success rates after colic surgery vary with the type of intestinal involvement. In general, horses have a 75% long term survival rate after colic surgery, with early diagnosis and proper treatment.