



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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## Research Update: Horse Water Intake

Many horse owners in northern climates feed a grain mash (i.e. grain plus water) to horses in cold weather. It is thought that by providing an additional source of water, potential dehydration related colic could be avoided. Water intake varies according to both outdoor temperatures and the temperature of water and cold weather has been reported to decrease water intake by 6 to 12%. In addition, consumption of water decreases as total dry matter intake in the diet decreases. It is unknown if the horse simply drinks less liquid water in response to increased water present in the mash. Thus, water intake in two different seasons in horses fed a dry grain or a mash was compared by researchers at the University of Wisconsin River Falls.

Ten mature horses were used and were housed in individual stalls, in a heated barn for trial 1 (Winter), and an unheated barn for trial 2 (Fall). Horses were divided into two groups, one which received pelleted concentrate at 0.5% of their body weight, and one which received the same pelleted feed with water added at a rate of 0.25 gallons per pound of feed. Alfalfa hay was offered at a maximum of 2% of their body weight,

divided into two equal feedings, morning and night. A total of 8.5 gallons of water was provided in two buckets at each feeding. Any water and feed remaining was measured prior to the next feeding. Horses were on their respective treatments for four days and then returned to their original pastures for at least two days before switching treatments. The same study was then repeated during the winter.

In the winter, horses on the mash diet had a tendency to consume more water than the horses on the dry concentrate, but no difference was observed in the fall. Horses did consume significantly less water in the winter compared to the fall. There was a significant interaction between treatment and season, with horses consuming dry grain in the winter drinking significantly less water than mash fed horses in the winter and fall. Therefore, feeding mash to horses does appear to be helpful to increase their overall water intake. Horses consuming mash drank equal to or more water than horses on the dry grain, in addition to the water they consumed in their feed.

Summarized by Shanna Privatsky, University of Minnesota

## Ask the Expert: Alfalfa Hay By: K. Martinson, PhD, Univ. of Mn.

**Question:** There is more alfalfa this year than grass. Would it be bad to feed a mature horse alfalfa?

**Answer:** Alfalfa is a suitable hay for mature horses. If the mature horse is idle (not working) and the alfalfa hay is immature and high in digestible energy, excessive weight gain could be observed. Purchasing alfalfa hay that is more mature (look for some purple flowers) would help decrease the digestible energy content and chance of excessive weight gain for idle horses. Adding exercise to an idle

horse's routine would also help reduce weight gain. If the horse is working or weight gain is desirable, then alfalfa hay is a good hay choice.

If you are currently feeding mostly grass hay, be sure to take 2 to 3 weeks to slowly transition the horse to the alfalfa hay to avoid any digestive upset; this is good advice when switching any hay type or feed. As with any other hay type, make sure the alfalfa hay is free of dust, weeds, and mold.

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### Upcoming Events

#### Fall Regional Horse Owner Program

Tuesday, November 19th  
Carver County Public Works  
11360 Highway 212  
Cologne, MN 55322  
Conference Room 1  
6:00 to 8:30 pm  
\$10

Registration required at [www.regonline.com/HorseCologne](http://www.regonline.com/HorseCologne)

#### U of M Releases 2 Apps for iPhones and iPads

“Hay Price Calculator” converts price per bale to price per ton. “Healthy Horse” estimates a horse's body weight, ideal body weight, and a body weight score based using new research-based equations. Both apps are available in iTunes for a small fee.

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## The Equine Spay

Erik Holtze, DVM, Former University of Minnesota Veterinary Student

Many horse owners are familiar with the idea of spaying dogs or cats. The equine spay procedure, however, is quite different. The uterus is left while one or both ovaries are removed. Horses may need to have ovaries removed to prevent pregnancy, to control genetic diseases, minimize health risks, to offset negative behaviors (i.e. moodiness or aggression during heat cycles), or for ovarian disease (i.e. tumors or abscesses). This article will discuss the pros and cons of four different approaches.

**Colpotomy.** With this procedure, the ovaries are removed in the standing mare through a vaginal incision. The mare is held off of feed for 36 to 48 hours prior to the procedure and will likely be pre-treated with mineral oil to help prevent colic. The mare is sedated and local anesthesia is used to numb the surgery area. The ovary is removed using an instrument that crushes and then cuts the vessels. The standing procedure minimizes the anesthetic risk and substantially lowers the cost. However, ovary removal is done blindly. This can result in damage to the intestines or other structures. The vaginal incision is generally not closed. This means bacteria can enter the abdominal cavity and/or intestines can slide out through the incision. The mare may need to stay in cross ties for a few days to allow healing and prevent intestinal herniation. Complications include hemorrhage since the vessels are not ligated, peritonitis (infection of the abdominal cavity), or vaginal abscesses. This procedure should not be used for enlarged ovaries.

**Flank ovariectomy.** In this procedure, the veterinarian makes

an incision in the standing mare through one or both flanks to reach and remove the ovaries. Prior to the flank incision approach, the horse is held off of feed for 36 to 48 hours, and will be pre-treated with mineral oil to help prevent colic. Sedation and local anesthesia is used to minimize any pain. Sometimes ovaries can be reached through one incision but this may not be possible in mares that have never been pregnant or in mares with small flanks. The ovary removal is also performed blindly by crushing and therefore holds risks of removing the incorrect structure. Other complications include bleeding, problems with the incision, and peritonitis. Mares should be kept quiet for two weeks while the flank incisions heal.

**Ovariectomy by laparotomy.** A mare's ovaries can also be removed in a method similar to that used in dogs and cats. The mare is placed under general anesthesia and positioned on her back. Incisions are made on either side of her udder, just over each ovary. The mare is held off feed for at least 12 hours prior to the procedure and will likely be pretreated with mineral oil to help prevent colic. This procedure enables the surgeon to see the ovary and ligate the vessels going to it, but does have added costs. Complications with this procedure include hemorrhage, peritonitis, incisional infections, incisional hernias and trauma during recovery. This approach is useful when a very large or very vascular ovarian tumor or abscess is identified.

**Laparoscopic ovariectomy.** Sometimes called keyhole or minimally invasive surgery, laparoscopic surgery is used to

remove ovaries in either the standing or anesthetized mare. The laparoscope includes a camera inserted through a small hole that allows the surgeon to see inside the abdomen. Special instruments are used to seal the vessels going to the ovary and to cut the ovary free. The ovaries are then removed via a flank or vaginal incision. Larger ovaries can be divided to allow removal through small incisions. This procedure minimizes the risk of hemorrhage and accidental damage to other structures. In most mares, the surgery is done standing, meaning no general anesthesia is necessary. Specialized equipment and training is necessary. This procedure is generally more expensive than colpotomies and flank ovariectomies but less expensive than laparotomies. Colic is still a risk. Mares are held off feed for 24 hours and pre-treated with mineral oil to help prevent colic.

Which procedure should a mare owner choose? If cost is a minimal concern, laparoscopic ovariectomy is considered the safest procedure. If that procedure is not available, it will be important to discuss the pros and cons of the available options with your veterinarian, taking into account the size of the ovary, whether or not the mare has had previous pregnancies, the mare's predisposition and willingness to stand for the procedure, budget and the level of risk the owner is willing to tolerate.