



# MONTANA EQUINE

## MEDICAL & SURGICAL CENTER

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### Greetings!

In this edition of our quarterly newsletter, we're very happy to present the first in a series of planned special-guest articles. In this issue, Jennifer Mohler shares her expertise in pasture management. Jennifer works as a resource conservationist, teaching pasture management, and assisting with conservation management for small acreage landowners. She also contracts with the Gallatin Conservation District. With the wet weather we experienced this past spring, the conditions may be ripe for poisonous plants cropping-up, even in established pastures.

First, some news and updates from the clinic. You can expect to see some new faces around the Montana Equine hospital this year. You might have had the opportunity to meet some of the many veterinary students during their 2 and 3 week externships at Montana Equine. We have a busy program, with senior students visiting from veterinary teaching hospitals throughout the U.S. and Canada during their final clinical year of training. The students are eager to learn and to see our type of select equine practice, and will sometimes participate as very highly-qualified veterinary assistants.

This group of visiting students also provides a great way for all of us to meet some very talented candidates who apply for our one-year veterinary internship program. These graduate veterinarians spend 12 months learning from our experts, often advancing to university residencies and true specialty Board Certification. They work hard during their internship, and their clinical work is supervised by our experienced senior veterinarians. Our goal is to provide training to young veterinarians from Montana and beyond, and more generally, to play a role in promoting quality medical and surgical care.

Our current veterinary intern is Dr. Amy Kafer, who joins us from Iowa. Dr. Kafer's background with livestock and horses was excellent preparation for practice at Montana Equine, where she handles many routine cases, and assists in most advanced procedures. Please help us welcome Dr. Kafer as a valuable member of the team during her 1-year internship.

As many of you have heard, Dr. Latson is leaving Montana Equine; a combination of family obligations and the siren-call of race-track practice caused Keith and his wife to reconsider their initial commitment to Montana Equine. Keith's strongest skills are lameness and surgery, so he had assumed much of Dr. Heidmann's busy lameness caseload. Although it might sometimes mean waiting a few days to schedule into Dr. Heidmann's book, he will reassume care of most complicated lameness cases, as in years past.

Like you, we want to balance the need to quickly select our next full-time, year-round surgeon with the need to choose a person with both the skills and personality to meet your expectations. In addition to doing some of the advanced lameness exams, our team of highly-qualified interim surgeons will be available to perform elective and emergency surgeries. With consistent coverage in our surgery department, Montana Equine is unique in our region – no other equine hospital has board-certified specialists in both Surgery and Internal Medicine, not to mention Dr. Flint's special

background in advanced reproductive procedures like freezing semen and embryo transfer. Besides our doctors highly specialized skills, we offer advanced digital x-ray, ultrasound, endoscopy, arthroscopy and laparoscopy to primary care and referral clients from a large geographical region, including Montana, Idaho, Wyoming and other states.

### *Lameness Questions?*

*Montana Equine offers:*

*Digital X-Ray  
Advanced Ultrasound  
Board-Certified Lameness Experts  
Advanced Arthroscopy*

### Poisonous plants:

#### What horse owners must know

Featured Guest Author: Jennifer Mohler  
(Full article w/ photos at [montanaequine.com](http://montanaequine.com))

After years of drought, the cool wet spring of 2008 was a welcome sight. Unfortunately, during my work I see the impact of many years of drought and overgrazing with an increase in both noxious and toxic weeds, and increased amounts of undesirable grasses like cheat-grass. Noxious weeds are any existing, or more likely, exotic plant species that may render land unfit for agriculture, forestry, livestock, wildlife. Noxious and poisonous plants are difficult to control and tend to dominate a site. They damage the environment by causing changes in the soil ecosystem. They alter the way nutrients flow and increase soil erosion by altering the hydrologic cycles of riparian areas, crowding-out important native species while increasing the occurrence of fire. Many of these noxious weeds are also toxic plants. In short, there are many reasons to control the spread of exotic and toxic plants in your pastures and hay-lot, but top among them may be the risk of accidentally poisoning your horses.

Plant toxins vary greatly, both in degree of potential harm and in classes of animals affected, but generally, any plant that contains or produces substances causing sickness, metabolic disorders, or any deviation from normal health is considered poisonous. Fortunately, poisonings among horses are fairly uncommon. Horses have a finicky nature when it comes to food, so they tend to avoid plants with questionable odors or flavors. Remember the key to controlling unwanted plants is taking care of what you want growing in your pastures - grass!

**Take care of your grass!** Grass, like all living organisms, has a life cycle. When a pasture is grazed continuously, grass plants don't have time to recover, allowing noxious and toxic weeds to move in and take hold. A healthy stand of grass is your best defense against weeds, and reducing the pressure on your pastures by feeding hay is the cheapest and most sustainable way to minimize weeds. To protect your horses from an accidental poisoning, here's what you need to know:

**First, you must identify the plants in your**

**pasture!** There are great resources out there. *Weeds of the West* is one of the most complete weed books out there. *Horse Owner's Field Guide to Toxic Plants* by Sandra M. Burger is also a great resource. Get help from your County Weed District, NRCS office, or Conservation District. To learn more about grazing management, take the 6-wk 'Pasture Management for Small Acreages' class. In Gallatin County, you can also contact Jennifer for a free site visit to help you identify what is growing in your pastures.

### **Eliminate any toxic plants on your property.**

Control or elimination of poisonous plants is the surest method of preventing livestock losses. Some methods are more effective for controlling certain weeds, so start with plant biology and find out what control method is most effective for that plant. For example, don't waste time pulling leafy spurge as its extensive root system won't be affected by your hard work – it may even make the situation worse! Use all the tools in the toolbox: herbicides, hand-pulling, mowing, etc. Generally, the best control of poisonous plants is good grazing management that will allow the good forage species to crowd out the poisonous ones.

### **Most poisonous plants do not naturally dominate range areas where they occur, but are the result of disturbance or damage to good forage plants.**

For example, lupine is a common plant in the Bozeman area. It is toxic, but horses will select grass over lupine when they have the choice. When pastures are overgrazed, lupine increases due to decreased competition. Horses get into trouble if the pasture is overgrazed and lupine is the only plant left. Remember: there is a balance in nature and in managing pastures! Plant diversity is an indicator of a healthy ecosystem. So having some lupine in the pasture is ok, but if the pasture is dominated by lupine, consider taking action to reduce the amount of lupine.

### **Fence animals out of areas where it is not feasible to control poisonous plants.**

Some areas, like wetlands, have many toxic plants and are valuable real-estate for wildlife and birds. Fencing grazing animals out can prevent poisoning while also protecting valuable habitat.

### **How you manage your animals also plays a critical role in exposing animals to poisonous plants.**

In many cases, animal management can minimize risk of exposure. Animals are commonly exposed to toxic plants when they are turned into overgrazed ranges, especially they are hungry, or unfamiliar with the area. Horses are also much more likely to consume toxic plants early in the season, during times of pasture-stress like drought, or when the total nutrient value of forages is poor.

### **Rules of thumb to prevent animal poisonings:**

- Provide supplemental feed (hay) during drought when poisonous plants are often the only green plants in the pasture. Don't turn out animals on overgrazed pastures.

- Purchase quality hay and monitor each portion that is fed. Animals are less selective when eating hay than they are in the pasture. As you feed, pay attention to what's in the hay and don't feed hay

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with toxic plants. Consider purchasing certified weed-seed free hay, as it's one way to make sure you're feeding quality hay.

- Alleviate boredom – exercise your animals. Horses that are regularly exercised don't have the energy to make mischief!

- Inspect new pastures before turning animals out, especially in spring. Provide adequate minerals as the lack of salt may produce strange cravings. Avoid grazing wetlands or woodlands where many toxic plants occur.

**The best control of poisonous plants is good grazing management – this allows the good forage species to crowd out the poisonous ones.**

For those living in Gallatin County, Jennifer is available for free property inspections. Contact her at 388-5668 or [jennohler@hughes.net](mailto:jennohler@hughes.net) to schedule an appointment

**If you think your horse ate a toxic plant:**

Relocate your horse to a cool, shaded area.

Contact your veterinarian immediately, even if your horse has not begun to show any clinical signs. Some plant toxins may have a delayed onset, and early intervention is always best.

Provide water but withhold food until the horse can be evaluated by a veterinarian. Additional food can cause the toxin to move further downstream in the digestive tract, where it is harder to remove via stomach tube.

Follow your veterinarian's instructions closely to help provide the best outcome for your horse(s)

**Grass Founder: Prevention and Treatment**  
Dr. Amy Kafer

Laminitis is a debilitating condition that affects the sensitive structures of the hoof. It is estimated that 15% of horses in the United States are afflicted with laminitis over the course of their lifetime. Up to 75% of these affected horses can develop severe or chronic lameness, often necessitating euthanasia. The coffin bone is suspended inside the hoof wall by laminae, fingerlike projections of tissue like microscopic velcro. When the integrity of this tissue is compromised, the sheer weight of the horse and the pull of tendons can cause separation of the coffin bone from the hoof wall. When the lamina of the hooves is inflamed (clinical "laminitis"), it can begin to break down and separate. Laminitis can lead to "founder", a later stage of the disease that occurs when the

coffin bone has actually moved within the foot. The term "founder" is a nautical term referring to the sinking of a ship – in horses "founder" applies when the coffin bone sinks within the foot. Clinical signs of the laminitic horse include reluctance to rise or move, shortened stride, shifting weight back and forth, leaning back to take pressure off the toes, and other signs of distress.

The underlying cause of separation of the lamina is altered blood circulation in the legs and feet. Founder is commonly associated with horses consuming large amounts of grains, serious illness like colic and pneumonia, as well as too much lush spring forage. Laminitis can either follow production of toxins within the body or toxins consumed from the environment; in either case circulation to the feet is altered. Decreased circulation can starve the laminae for oxygen and nutrients, while increased bloodflow can deliver potent toxins such as metalloproteinases. Either event can result in an inflammation of the laminae and varying degrees of damage.



Grass founder has the same mode of action as an overload of grain. Researchers have identified "fructan", a storage form of sugar found in high concentrations in our cool season grasses. Fructans can escape digestion in the foregut, leading to very rapid fermentation in the large intestine. The associated byproducts of this fermentation restrict the flow of oxygen and nutrients in the bloodstream, compromising the laminae structure of the hoof.

Growing conditions of grasses have a significant impact on fructan levels found in forages. Fructans are produced during the day from sunlight and are stored in the lower stems and roots, which is energy the plant can use for growth when conditions are less than ideal. Care does need to be taken during the spring of the year when preparing to turn horses out to pasture. Generally, drought-stressed forages are most dangerous after they begin to grow again during more favorable conditions.

Ponies and draft horses are often considered most prone to grass founder, however any horse in an unhealthy condition can be at-risk. Overweight horses are particularly susceptible. On the other hand, a horse who is properly acclimated to grasses should be at a much lower risk for grass founder.

**Prevention:**

To avoid grass founder, the horse should be slowly introduced to Spring forage. In susceptible horses, we usually recommend beginning to graze each spring at 10-15 minutes total per day. Grazing can increase by 5-10 minutes per day to a total of 2 hours (i.e. it should take 10-20 days to increase to 2 hours). Increasing by 30 minute increments every several days usually makes sense at this point. After the grazing time increases to 6 hours per day, it is usually reasonable to increase by hourly increments. After this, most horses should be prepared to digest a constant supply of grass. Longer periods of grazing can occur if done at night -- this is the time when plants are not actively producing fructan. Rotational grazing systems can also help keep horses from grazing stressed, overgrazed grasses. During the fall, grasses often have another growth spurt, so this is another critical time of year for careful management. You may need to limit turnout again in the fall, even for horses who have been turned-out all Summer.

Remember to always watch horses closely for early signs of laminitis (e.g shifting weight, "walking on eggshells") when grazing conditions change, and immediately remove horses from pasture if they show these signs. It is safest to limit the total pasture turn-out time for at-risk horses, such as those with chronic obesity, or previous episodes of clinical laminitis. These horses often obtain plenty of nutrition during 4-6 TOTAL HOURS of grazing each day. For susceptible horses, we often recommend the use of grazing muzzles. There are various types on the market, but the goal is to allow horses to burn calories by remaining in a pasture yet limiting the amount of total forage they consume.

Prevention is the best way of dealing with any type of laminitis because this devastating disease can be cumulative, with each new episode causing more serious problems than the previous. The goals of treatment are to reduce pain, minimize permanent laminar damage, and prevent rotation of the coffin bone. If you suspect that your horse is laminitic, call your veterinarian right away. Laminitis is considered a medical emergency and the sooner treatment begins, the better the chances for recovery. For more information, please feel free to contact us, or check out [safegrass.org](http://safegrass.org). The veterinarians at Montana Equine are ready to discuss your concerns about laminitis and are happy to consult with clients and veterinarians at any time.

**OUR SPECIALIST DOCTORS  
ARE ALWAYS ON-CALL**

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