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How can I safely graze my horses? High risk horses?

A gradual introduction to pasture is an essential component of a safe grazing program. Starting with less than an hour for the first week and increasing by 30 minutes to an hour every several days is a safe way to acclimate your horse's intestinal system to its new diet.

Identifying high risk horses and taking necessary precautions when pasture grazing can help prevent a case of laminitis. High risk horses are those with a history of laminitis, "easy keepers", geriatrics, obese, have abnormal body fat deposits, diagnosed with Cushings disease, or have equine metabolic syndrome. A thorough veterinary exam can be helpful in identifying these at risk horses.

There are many strategies to manage high risk horses on pasture. Limiting time spent on pasture, restricting the size of pasture, grazing at night or early morning when sugar content is lowest, planting lower starch grass species, avoiding overgrazed pastures and using grazing muzzles are effective methods to limit the amount of carbohydrates ingested while grazing. Severely affected horses may need to be kept off pasture entirely and confined to a dry lot.

An excellent source of information on safe pasture management and laminitis can be found at www.safergrass.org

What if my horse gets laminitis?

Although laminitis is a serious, life threatening disease of horses, the outcome can be a positive one. Early recognition and treatment of this disease is critical to prevent permanent damage. Treatment of laminitis includes, anti-inflammatory medication, protecting the hooves from concussive forces, hoof trimming, diet management, and in some cases, radiographs of the coffin bone. Some horses can recover from laminitis and return to their previous level of performance, while others can have lasting effects and may be unable to be used for riding.

For more information on Laminitis or the 2009 Breeding Package included in this mailing, please check our website or contact our office.



Spring 2009 Newsletter

Trying to understand why your mare did not get pregnant last year?

This article covers common problems associated with infertility in mares. Understanding them can help you have a more educated discussion with your veterinarian and address the issues as soon as they come up so you end the breeding season with success!

The most common mare reproductive problems are:

- Mares that do not cycle properly or at all.
- Mares that conceive and lose their pregnancies after 45 days.
- Mares that either don't conceive or lose their pregnancies before 40 days.

Different tests are conducted for each of the three problems. If your mare isn't cycling properly, the hormonal signals from the brain are not getting to the ovaries, indicating that the mare has an endocrine problem. In addition to a rectal and ultrasonographic examination of the reproductive tract, blood needs to be drawn to measure hormones. If the cause of the endocrine problem is a tumor, it can be surgically removed. Most mares will cycle back within six to eight months. Other causes, such as Cushing's disease (hyperactivity of the adrenal cortex caused by a pituitary tumor that can't be removed), administration of anabolic steroids, stress due to pain (chronic laminitis) or performance anxiety, and "cystic follicles" due to old age are not as easy to correct. Mares with the latter problems need long-term management and frequent veterinary examinations. Mares in categories two and three have normal endocrine function, but have defects in their reproductive tracts.

Mares that conceive and abort after 45 days usually have degenerative fibrotic changes to the uterine glands. These changes interfere with the glands' ability to produce uterine milk, the secretions that nourish the embryo until the placenta attaches between 60 and 100 days. If the glands are not functioning properly, the embryo starves. This abnormality is identified by uterine biopsy, but there is no successful treatment. These mares usually make good embryo transfer candidates.



The most common mare fertility problem is uterine infection. Typically these mares have clean uterine cultures in the spring, then have bacteria isolated from their uteri after they have been bred three or four times. Two types of mares fall into this category:

- Mares that have had three or four foals and cannot clear their uteri of the inflammatory by-products of breeding
- Maiden mares with tight cervixes

The older mare accumulates fluid because her uterus is lower than her pelvis and the uterus cannot drain, and/or she has perineal defects resulting in self-contamination. Maiden mares become infected because the cervix does not open and drain properly after breeding. Mares in this category need a complete breeding soundness evaluation conducted when they are in heat, including rectal and ultrasonographic examination of the reproductive tract, vaginal examination, digital examination of the cervix, uterine culture, and cytology. Some of these mares might need reproductive surgery to correct perineal defects, urine pooling, or cervical lacerations. These mares should be re-cultured after treatment and a second cytology exam needs to be collected before they are given a clean bill of health.

Article By Michelle M LeBlanc, DVM published on the American Association of Equine Practitioners website.



Procedures not included that if necessary will be charged additionally are:
uterine antibiotic infusions, uterine flushes, uterine culture, cytology or biopsy,
hormones to bring the mare into heat (prostaglandin = Lutalyse) or to assist with
pregnancy maintenance (Regumate), caslicks surgery, pregnancy exams.

3) Prices for individual procedures (at NW Equine's facility or at owners property):

IV Sedation/dose: from \$ 45-68.00 (depending on drug)
Rectal exam: \$ 48.00
Ultrasound for reproductive exam and follicle check: \$ 60.00
Vaginal and cervical speculum exam: \$38.00
Ultrasound for pregnancy exam (up to 3 months gestation): \$ 75.00
Uterine biopsy (procedure and laboratory charges): \$ 188.00
Uterine cytology (includes laboratory charge): \$ 130.00
Uterine culture and sensitivity (includes laboratory charge): \$ 130.00
Uterine flush/lavage with 1L sterile fluid: \$ 80.00
Uterine infusion: \$ 53.00 (plus cost of antibiotic)
Shipped semen analysis: \$ 65.00
Caslicks surgery: \$ 85.00.00
Hormones/dose:
 HCG: \$ 32.00
 Oxytocin: \$ 8.00
 Prostaglandin: \$ 24.00
 Ovuplant: \$ 70.00
Farm calls: \$69-84.00 depending on distance

STALLION FEES:

Live cover assistance: minimum \$50.00
Semen collection: \$ 225.00 (if stallion is trained and reasonably behaved)
Semen evaluation
 Simple: \$ 65.00
 Complex: \$ 125
Complete stallion fertility evaluation
(testicular exam, rectal exam, behavior, etc): \$ 250.00 + complex semen evaluation
Semen collection, semen simple evaluation, preparation for shipping: \$300.00
Equitainer refundable deposit: \$100.00
Equitainer rental (approx. 4 days): \$50.00

Please note there are no guarantees or assurances for 100% success when dealing with breeding in horses. Breeding package fees are payable regardless of the occurrence of shipped semen problems that are not NW Equine's responsibility (quality, shipping troubles, etc) or final outcome of mare (pregnant or not).

**We kindly request that boarding fees be paid in separate from breeding package.
All charges must be paid in full prior to discharge of mare.**

Thinking of breeding your mare with cooled semen?

To breed mares successfully with cooled semen, all parties involved, mare owner, stallion manager and veterinarians, need to cooperate when coordinating the semen shipments with the timing of the mare's ovulation. Before shipping semen, the attending veterinarian or a representative for the veterinarian should clarify several points with the stallion manager.

- The cost of stallion collection
- The cost of preparing the semen for shipment, the number of collections provided gratis (if any), the cost of shipping semen tanks by air, and when and how the semen tanks must be returned
- The days of the week the stallion is collected
- Times during the breeding season when the stallion will not be available
- The number of days notice that the stallion manager needs before the semen shipment
- The latest time one can call to obtain semen (for example-one must call by 9 am to receive semen by the next day)
- The longevity of the semen – does it live in the tank for 12, 24 or 36 hours
- First-cycle conception rate of the stallion
- The method of air transport used (same-day air or overnight shipment)
- Number of times the mare can be bred if she does not conceive (is the contract limited to 1, 2 or 3 years)
- The breed registry requirements, and the number and timing of post-insemination clinical (pregnancy) examinations must be established

First cycle conception rates tend to be slightly lower with shipped semen than with natural breeding or when using artificial insemination with a stallion housed at the same facility as the mare. Also, breeding management is more intensive and veterinary costs are higher.

Mares need to be examined daily when in heat and bred within 24 hours of ovulation. Stabling a mare at a facility, such as a veterinary clinic or farm where the veterinarian visits daily, saves money on veterinary travel fees. Furthermore, these facilities have a stallion to tease the mare to determine when she is in heat, thereby, limiting the number of times that she will need to be examined.

Pregnancy rates are highest when mares are bred within the 24 hours before ovulation using semen of high fertility. The quality of the semen is of paramount importance: stallions of low fertility usually have much lower conception rates than those with high inherent fertility. In addition, the handling of the semen is critical; failure to prepare it correctly, as well as poor subsequent handling at the mare end, can make the process very disappointing.

Timing of the breeding with the ovulation can be difficult especially if the stallion is collected only 3 times a week. Ovulation can be induced with drugs such as hCG or Ovuplant, however the window from injection of the drug to ovulation varies. Mares may ovulate as quickly as 24 hours, as late as 48 hours after administration of hCG or they may not respond at all. The window from injection of Ovuplant to ovulation is tighter than that of hCG with most mares ovulating between 42 and 48 hours, however, it costs about 2.5 times more than hCG. In either case, it is extremely helpful if you know the specific idiosyncrasies of your mare's estrous cycle, especially the number of days she is in heat and the size of the follicle, that she ovulates.

There are standards that the semen needs to meet to be considered of adequate quality. A dose of semen should contain a minimum of 500 million progressively motile sperm with at least 30 percent of the sperm being progressively motile. Each time the mare is bred with cooled semen, it should be examined carefully after it has been warmed for a minimum of 3 minutes. If it is of poor quality the stallion manager or veterinarian for the stallion should be notified.

After insemination, the reproductive tract of the mare should be examined daily until she ovulates. If she does not ovulate within 24 hours she should be bred a second time.

Article By Michelle M LeBlanc, DVM published on the American Association of Equine Practitioners website.

Northwest Equine offers complete breeding services for mares and stallions. These include artificial insemination, ultrasound exams, follicle monitoring, uterine culture, cytology and biopsy tests, treatment for infertility, semen collection and shipping, among others. Please contact us if you need assistance with setting up your breeding program!

Pasture Associate Laminitis: Is your horse at risk?

By: Erin Kennedy, DVM

What is Laminitis?

Laminitis or "founder" is a tremendously painful, debilitating and life threatening disease that can occur in horses. The National Animal Health Monitoring System's Equine 1998 study found that 2% of US horses are affected by laminitis each year. Of the horses affected with laminitis, 4.7% died or were euthanized.



Approximately half of the laminitis cases were a result of grazing lush pastures. Most horses were affected in the spring or summer months when pastures are growing rapidly. Becoming aware of the risk factors, signs of disease and strategies to prevent pasture associated laminitis can help reduce the number of horses that will suffer from this laminitis.

Laminitis is due to inflammation and failure of the supportive soft tissue structure that connects the inner part of the hoof wall to the coffin bone, known as the laminae. Weakening of this bond can lead to downward rotation and "sinking" of the coffin bone within the hoof. Laminitis is most often seen in the front limbs, but can affect all four limbs. Signs of laminitis can be mild to severe and include: reluctance to walk or move, shifting weight from one foot to another, "sawhorse stance" leaning back on hindquarters, and heat in the hooves. Laminitis is an emergency, if any signs are present in your horse, remove them from pasture and call your veterinarian immediately.

How does pasture grazing put my horse at risk?

Pasture associated laminitis is most commonly reported cause of laminitis. Grazing horses on lush pastures can cause this disease by triggering gastrointestinal disturbances and impacting chronic metabolic disorders. Grazing lush or stressed grass can lead to ingestion of very high levels of carbohydrates such as starch, simple sugars and fructans. When horses ingest too much of these carbohydrates, the small intestine becomes overwhelmed. Fermentation of these carbohydrates in the hind gut leads to changes in the normal bacterial population, and the sugars "spill" over into the large intestine.

Such disturbances can result in lactic acid production and a decrease in intestinal pH. This triggers a cascade of events which can lead to blood flow constriction, altered glucose uptake in the hooves and a release of toxins into the blood stream. The sensitive hoof lamina is impacted by these events and the damage begins.

Carbohydrates in grass pastures can have a negative impact on horses with metabolic disorders such as Cushings disease and equine metabolic syndrome. A high number of these horses suffer from insulin resistance. Insulin resistance in horses is much like type 2 diabetes mellitus in humans. Grazing on high carbohydrate pastures leads to unhealthy glucose spikes and altered insulin function in the body. Insulin resistance impacts blood flow to the hooves and impairs the tissues ability to use glucose.

Is my horse a high risk for insulin resistance and laminitis?

Horses with equine metabolic syndrome or insulin resistance are often described as "easy keepers" and commonly are obese with abnormal fat deposits. These fat stores can be present along the top of the neck (cresty neck), tail head, shoulders, sheath, and along sides of the horse. The rib cage in these horses is hard to feel with light pressure. Certain breeds of horses are more predisposed and include Paso Finos, Morgans, Fjords, and pony breeds. Excessive body fat has been found to have gland-like characteristics and secrete hormones and inflammatory cells into the blood stream. These cells have negative effects on the health of the horse and exacerbate insulin resistance. Screening tests for insulin resistance can be easily performed by your veterinarian.

Is my pasture safe?

Not all pastures are created equal. Many factors can impact the sugar content in grass pastures. Certain species of grass can contain higher levels of sugars compared to others. Temperature fluctuations and sunlight impacts the growth and storage of sugars within the plant. Stressed grass from drought, freezing or overgrazing has been found to contain 5-10 times higher sugar content. Samples from your pasture can be sent to a laboratory for analysis, but due to constant changes in temperature, sunlight and grazing, the results can be of limited value.