

Equine Ambulatory News

Fall 2010 • Volume Six - Issue Two

Clinic Helps Address Horse Overpopulation Issue

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MU Takes Action to Stop Growing Problem

After a particularly hot and buggy summer we are all excited to welcome the cool relief of the Missouri fall. This is the time of year when many people load up their equine friends and take a long weekend riding in the woods. Remember that if you are traveling with your horses a negative Coggins is required. If you are crossing state lines then you will also need a health certificate to travel. States have differing requirements for equine travel so be sure to check ahead of time and make sure you have all of the necessary documentation.

This fall, the University of Missouri held its first-ever Castration Clinic. In an effort to address the unwanted horse issue, we provided a free castration clinic to Missouri residents who have stallions that they could not otherwise afford to castrate. The ultimate goal is to reduce the number of unwanted horses in the state while increasing student exposure and experience in both field anesthesia and castration.

We modeled our Castration Clinic from the Gelding Project that was held in Minnesota. The Animal Humane Society, in partnership with the Minnesota Horse Welfare Coalition and the Minnesota Horse Council, has hosted two free castra-



tion days. Both clinics have been a success in Minnesota and there is a demand for more. We hope that we will receive the same positive feedback and we certainly have seen evidence of a demand for such a service.

During these tough economic times we have to do our best to advocate for our equine friends and provide support and guidance to horse owners. The Castration Clinic is a small step in this direction to educate horse owners and the general public not only about the unwanted horse issue, but about general horse care and husbandry in order to prevent unwanted and unnecessary breeding.



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TEACHING
HOSPITAL

MISSION STATEMENT

The mission of our equine ambulatory service is to provide the highest standard of medical and surgical care to our patients while training the next generation of veterinarians. We feel we are truly attaining this goal by working together as a team.

900 East Campus Drive
Veterinary Medical
Teaching Hospital
University of Missouri
Columbia, MO 65211

Meet the University of Missouri Equine Ambulatory Team

Dr. Alison LaCarrubba, originally from New York, graduated from the University of Missouri College of Veterinary Medicine in 2001. Alison stayed on at the University to complete an internship in equine medicine and surgery. After the internship, she spent a year working in an equine exclusive private practice with a special interest in reproduction. Alison returned to the University in July 2003. Although the majority of her time is spent in the ambulatory truck, she also devotes time to working with the medicine department in the teaching hospital. Alison completed the credentialing process for the American Board of Veterinary Practitioners in Equine Practice and is now focused on becoming more specialized in the field of equine dentistry. She recently attended a dental seminar hosted by the Missouri Veterinary Medical Association at Longmeadow Rescue Ranch and plans to further pursue continuing education in equine dentistry during the next year.



Dr. Alison LaCarrubba

Dr. Martha Rasch is a clinical instructor at the MU College of Veterinary Medicine and focuses on the equine ambulatory practice. Martha was born in Chicago, Ill., and grew up riding hunters and jumpers in St. Louis, Mo. She began to ride in three-day events in college. After earning a DVM at MU, she completed a rotating equine internship at the University. She then continued on to work as a clinical instructor for the equine ambulatory service. She spends the majority of her time instructing senior veterinary students while traveling to work on horses within the Columbia area. She is particularly interested in wound management as well as critical care in the ambulatory setting. Dr. Rasch works closely with the referral clinicians in the MU Equine Clinic to provide superior care to horses.



Dr. Martha Rasch

Our interns have a special interest in working with horses, and potentially going on to complete a residency, specializing in either equine medicine or equine surgery. Every June we welcome a new crop of interns. This year our interns include Drs. Charli Jane Walrond, Lauralyn Marshall and Alyson Hilmer.

Charli Jane Walrond is from Panama City, Fla. She graduated from the University of Florida Veterinary College in May of 2010. Her first interaction with horses was as a child on her grandparents' farm with their pony Tinkerbelle. In middle school, she began participating in Pony Club and rode dressage and jumping for fun. After completing her internship at MU, she plans to enter general practice on the East Coast.



Dr. Charli Jane Walrond

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Farrier, Veterinarian Partnership Important for Hoof Health

As the veterinarian, we are responsible for the overall health of the horse, including but not limited to the feet. We have all heard the adage, "A horse is only as good as his hooves." This is why an extensive knowledge of podiatry and a good working relationship with a farrier plays a vital role in maintaining soundness. The farrier works most consistently with a horse's feet and knows each individual and how they change and grow over time. The farrier will likely see each horse every four to six weeks for trimming and shoeing. They will have the unique perspective of handling the individual animal multiple times throughout the year.

The veterinarian will come to the table with a working knowledge of the locomotor system as well as access to a variety of diagnostics. Together the veterinarian and farrier can use their individual skills and tools to address any problems or issues the individual may be having. More and more often farriers are utilizing radiographs taken by veterinarians and in consultation with veterinarians to determine an appropriate shoeing or trimming regimen. From the radiographs specific measurements can be taken and then utilized for current and future recommendations. Having base-line radiographs can be very helpful

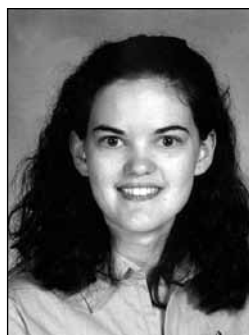


in the event of injury or illness to better understand what changes have occurred.

The quality of the relationship between the farrier and veterinarian is not only important for hoof lameness, but also for non-hoof lameness. Joint, tendon and ligament injuries can often benefit from supportive shoeing techniques. The veterinarian can discuss therapeutic goals with the farrier and the farrier can use his/her particular expertise to execute the plan.

Interns

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Dr. Lauralyn Marshall

Lauralyn Marshall grew up in Pelham, Ga., and has been riding horses since she was 13. She enjoyed barrel racing in Saddle Club and 4-H Horse Shows. In undergraduate school at North Georgia College and State University she showed Western Pleasure in the Intercollegiate Horse Show Association. She attended veterinary school at the University of Georgia College of Veterinary Medicine, where she became interested primarily in internal medicine and focused on equine studies. Lauralyn plans to pursue a residency in equine internal medicine or possibly field medicine after completion of the internship. She continues to trail ride her horse and go hiking in her free time.

Allyson Hilmer grew up competing locally and nationally in all around events at American Quarter Horse Association shows. She first learned to ride at the age of 10 while living in England, showing ponies in local jumping shows. She completed her undergraduate degree at the University of Wisconsin Madison and graduated in 2009 from the University of Georgia College of Veterinary Medicine. After graduation, she completed a private practice internship at Chino Valley Equine Hospital in California before starting her internship here. Her main interests include lameness, diagnostic imaging and orthopedic surgery. Her ultimate goal is to enter a surgical residency program.



Dr. Allyson Hilmer

Case Study:

Joint Wound Needs Aggressive Intervention

Charlie, an 8-year-old quarter horse gelding presented to the equine ambulatory service for a severe laceration to the lower limb. Upon arrival Charlie was unable to bear full weight on his left hind limb and would only touch his toe to the ground.

A physical examination was performed and revealed an elevated heart rate, which is often a sign of pain. The wound encompassed the lateral heel bulb and extended around the lateral side of the leg to the front, or dorsal aspect of the pastern. The wound penetrated full thickness through the skin and into the subcutaneous tissue and toward the joint. There was great concern that the wound did in fact extend into the coffin joint (joint within the hoof) or a different synovial structure, such as the pastern joint or digital tendon sheath.

The tendon sheath extends along the back of the leg from just above the fetlock to just above the heels of the horse. Infection of any joint or tendon sheath structure can prove detrimental to the horse and costly to the owner. Immediate and aggressive treatment is warranted if such an injury is suspected. The wound was cleaned extensively in the field, a bandage was applied and an anti-inflammatory administered prior to referral to the Veterinary Medical Teaching Hospital.

Upon arrival at the teaching hospital the bandage was removed and radiographs of the area were taken to rule



out a fracture or involvement of the bone in the affected area. Charlie was then placed under general anesthesia for more in-depth exploration of the wound. Although Charlie was a cooperative patient, it can be difficult to work on the lower limb of any injured horse. General anesthesia allows veterinarians to work quickly and safely while providing the most comprehensive exploration of the area.

In surgery it was determined that the coffin joint was in fact contaminated, but no other structures were

involved. A needle was placed into a site distant from the laceration and the joint was flushed extensively with saline to ensure it was free of any debris and foreign material and then an antibiotic was injected directly into the joint. The wound margins were cleaned and closed as much as possible and a bandage was applied.

There is concern about horses with this type of injury suffering from laminitis (founder) in the opposite limb because they are bearing the brunt of

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Charlie

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their weight on only one hind leg. A special support shoe was placed on the unaffected limb to stave off an episode of laminitis in that limb.

After the initial surgery, broad spectrum intravenous antimicrobials were started to control the infection and Charlie was given anti-inflammatory medication to control his pain. Two days after the original surgery Charlie was again put under general anesthesia to allow a second high volume flush of the joint to ensure that it was in fact no longer contaminated. Infections of joints and synovial structures often require multiple treatments in order to respond favorably.

After the second surgery, a foot cast was placed to stabilize and support the hoof and allow the wound to heal in a timely manner. Charlie was hospitalized for four days before being discharged. Charlie was placed on strict stall confinement and was continued on antimicrobial and anti-inflammatory medications. The ambulatory service provided weekly bandage changes and assessed the cast in an effort to avoid complications. The hoof cast was removed after three weeks and Charlie was kept in a bandage for a total of five weeks from the time of injury. Charlie does not have any signs of lameness at this time and his owner is happy with his progress.

This case highlights the importance of pursuing aggressive therapy early when a laceration involves a joint or other synovial structure. Left untreated, a wound like Charlie's could at the very least end an athletic career and in the worst case scenario could result in euthanasia.

Coggins Test Detects Equine Infectious Anemia

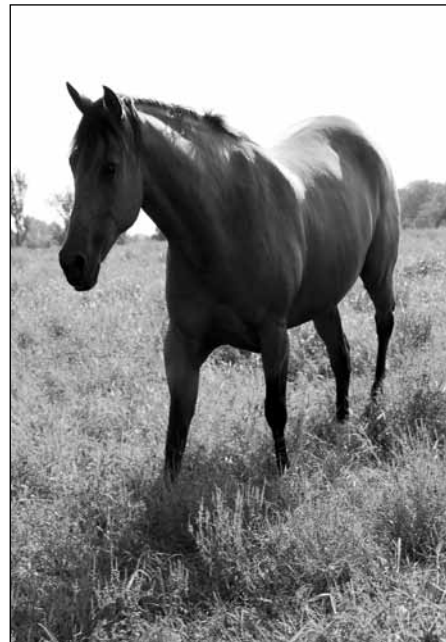
Equine Infectious Anemia (EIA) was recently found in a horse from Vernon County Missouri as part of a routine Coggins test. EIA is a viral disease originally known as swamp fever due to the propensity to affect horses living in swampy areas, especially associated with the Gulf Coast.

Transmission of EIA is most commonly associated with blood sucking insects, such as horse flies, deer flies, mosquitoes and gnats. There is currently no vaccine to protect horses from the virus and no specific therapy to treat the disease. Infected horses can present in one of three ways, acute infection, chronic infection or inapparent carrier. Inapparent carriers do not show clinical signs of the disease but they do harbor the disease for the duration of their life and remain infectious to other animals.

Dr. Leroy Coggins from Cornell University designed the Coggins test in 1970. This test detects antibodies to the disease, which is an indication of exposure. The USDA recognizes the Coggins test as valid and reliable for the diagnosis of EIA.

If a horse tests positive for the disease, the horse must be immediately quarantined and a brand applied, humanely euthanized, or

Horses crossing state lines must have a current negative Coggins.



moved to a federally approved diagnostic or research facility.

The horse from Missouri was humanely euthanized at the request of the owner and under the recommendation of the state veterinarian. Preventative measures can be taken to reduce the risk by minimizing fly bite exposure through the use of repellents and foggers.

All horses should be tested yearly and any horse that is traveling or showing must have a current Coggins. It is federally mandated that horses crossing state lines must have a current negative Coggins.

Economy Worsens Problem of Unwanted Horses



By Nathaniel T. Messer IV, DVM
Diplomate ABVP-Equine

Unwanted horses represent a subset of horses within the domestic equine population determined by someone to be no longer needed or useful, or their owners are no longer interested in or capable of providing care for them either physically or financially. Unwanted horses include essentially healthy horses of varying ages and breeds as well as horses with some type of disability or infirmity.

Until 2007 most unwanted horses were sent to slaughter with fewer numbers being rescued/rehabilitated, euthanized and disposed of. There was an even smaller number simply abandoned and left to die of natural causes. Since the closure of all of the U.S. slaughter plants in 2007, a significant and increasing number of unwanted horses are being exported to Canada and Mexico for slaughter.

From 1992 to 2007, approximately 75,000 to 150,000 horses were sent to slaughter

each year in the United States, with an additional 10,000 to 20,000 horses sent to Canada during the same time period. The number of animals exported to Mexico was estimated to be 6,500 in 2005, 12,000 in 2006 and 45,000 in 2007.

Why are there so many apparently unwanted horses? Is there a glut of horses in the United States today? The demand for the buying and selling of horses follows global economic trends. With the recent economic downturn the supply of horses on the market has exceeded the demand to buy horses. This, in conjunction with the closure of the slaughter plants in this country, has created the perfect storm of an excessive number of unwanted horses. Although various equine welfare organizations and equine welfare advocates have made a conscientious and concerted effort to either provide care or funding for unwanted horses, the burden is too great. There simply are not enough volunteers, funding or placement opportunities for

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all of the unwanted horses. A more detailed study investigating the demographics of horses deemed to be unwanted would allow the horse industry to focus more appropriately on the problem.

A recent national survey of horse owners, trainers, veterinarians, rescue farm operators, and the public conducted by the American Horse Council, and which appears on their website (www.horsecouncil.org) suggests that the unwanted horse problem is a huge problem that has escalated dramatically in the past three years. The primary reason cited for why horse owners relinquish their horses was the economy. This has been compounded by the closure of the U.S. processing facilities, by the high cost of euthanasia and disposal, and indiscriminate breeding. One of the more disturbing observations by survey respondents is that the number of horses being abandoned and neglected/abused has increased significantly.

Fortunately, the American Association of Equine Practitioners initiated discussions about the plight of the unwanted horse in 2004 by sponsoring an Unwanted Horse Summit in Washington, D.C. From this summit the Unwanted Horse Coalition was formed. This is a coalition composed of horse industry organizations, veterinarians and animal welfare organizations that oversees initiatives to educate horse owners and to help identify solutions to the unwanted horse problem. For more information on the Unwanted Horse Coalition, visit www.unwantedhorsecoalition.org.

Wet Environment Raises White Line Disease Risk

The white line is the area between the outer hoof wall and inner sensitive tissues or laminae, which is seen normally as a discrete line on the sole of the hoof. White line disease is a progressive deterioration of this white line resulting in separation of the sensitive and insensitive tissues of the hoof.

The disease typically begins when a crack in the hoof wall allows bacteria and fungi to enter into the deeper tissues of the hoof. Particular environmental conditions may predispose to this condition. If there is drought and the ground is dry and hard the hooves will be predisposed to cracking, allowing organisms to enter the tissues. An excessively wet pasture provides the breeding grounds for the organisms that cause white line disease.

In affected animals the white line goes from being a discrete junction with obvious sensitive tissue to a marginalized area filled with a white chalky material. As this white powder is removed the hoof wall is hollowed out. Some cases can become so severe that the affected area extends all the way to the coronary band. Increased tensional forces on separated hoof wall causes more separation and inflammation develops in the sensitive laminae, which causes lameness, heat and tenderness.

There is no breed or sex predilection, and the front feet are more commonly affected. The disease is more common in humid areas of the United States, such as Missouri.

The degree of lameness associated with white line disease can be variable and ranges from not detectably lame to obviously lame at a walk depending on the severity of the condition. White line disease is commonly diagnosed during routine farrier work with no clinical signs that were obvious to the owner. When making a diagnosis it is helpful to inspect the hoof carefully and to probe the white line. There are often focal areas of undermined hoof wall that sound hollow when tapped with a hammer. Radiographs are also helpful in determining the extent of the disease.

Treatment of white line disease is accomplished by removing the separated hoof wall and keeping the horse in a dry clean environment. After removal of the affected hoof wall topical antimicrobials and antifungals can be applied. If an extensive amount of hoof wall is removed it is advised to place a shoe on the horse to provide stability. It is important to remember that although white line disease can be time consuming to treat, with proper farriery and access to a clean, dry environment, most horses respond favorably.

New Diagnostic Techniques Remove Dread of Diagnosis

Lameness associated with the navicular bone is a problem that has been documented for centuries, but has not been well understood making it difficult to pursue targeted therapy. One of the biggest difficulties relative to treatment and prognosis for navicular related problems is that the anatomy of the bone and surrounding soft tissue structures are both complicated and difficult to image. In the past, lameness related to any of these structures was referred to as navicular syndrome, which was a term feared by any horse owner as the end of an athletic career for their horse. With the advent of new diagnostic technologies such as MRI and computed tomography, the complicated structures of the foot are able to be evaluated in greater detail, and therefore a more specific treatment regime and prognosis are typically available.

The key to unlocking this complicated lameness lies in understanding the anatomical relationships of the structures of the foot and the stresses employed on these structures by repetitive motion.

The navicular bone itself sits just behind the coffin bone in the hoof capsule and is supported by a number of ligaments, which essentially create a sling for the bone. When a horse experiences pain in the heel it may be originating from the bone itself or it may originate from any of the associated ligaments and soft tissue surrounding the bone.

Horses affected with palmar foot pain (heel pain), typically are affected to some degree in both front feet, although one foot may be affected more severely than the other. They usually move with a shortened, choppy gait that is worse when moving on a hard surface such

as concrete or asphalt. The lameness is most often persistent and progressive over the years.

The most typical manifestation of navicular disease is chronic degenerative changes of the navicular bone seen radiographically. These changes are best seen radiographically; however, a local block applied to a nerve that innervates the heel is truly the only way to confirm that the horse's pain is associated with the navicular region.

Damage to the ligaments and the deep digital flexor tendon associated with the navicular bone is not only difficult to diagnose, but also difficult to image due to the location of the navicular bone within the hoof capsule. The best way to diagnose soft tissue lesions is by MRI. An MRI will allow a thorough evaluation of the bone, the associated cartilage and the surrounding soft tissue structures.

Given the wide range of possible causes of lameness associated with the navicular bone and associated soft tissues, there is necessarily a wide range of treatment options. In mild cases that involve minor radiographic changes, shoeing modifications, such as providing heel elevation, using an egg-bar to move the weight bearing surface further back, and rolling the toe to bring back the point of break-over, may be all that is necessary to provide more comfort. Horses may be placed on an anti-inflammatory such as phenylbutazone for a short time just prior to any shoeing modifications to decrease inflammation and allow the horse time to adjust to new hoof angles.

Other treatment options include intra-bursal (navicular bursa) or intra-articular

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Lameness

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injection of corticosteroids into the navicular bursa or coffin joint to decrease inflammation locally. In the case that the lameness is only related to one of the supporting soft tissue structures, a significant period of stall rest from six months to a year may allow this type of injury to heal and the horse to return to its original athletic potential. Another systemic treatment option is the use of tiludronate given intravenously. Tiludronate acts to normalize bone metabolism, which may slow the degenerative progression of the disease.

Occasionally the lameness is refractory to the above mentioned treatments, in which case a more invasive treatment may be utilized. Performing a palmar digital neurectomy (“nerving”) will provide a longer period of pain relief. In this surgical procedure the nerves providing sensation to the heels are transected, cutting off sensory feedback and eliminating perception of pain.

It is important to keep in mind that this procedure does not treat the underlying disease and is merely providing pain relief. This procedure is not benign, and all of the possible complications should be heavily considered before having a neurectomy performed. The neurectomy will typically provide pain relieve for 12 to 18 months. The risks of this procedure include all of the risks associated with any general anesthesia procedure as well as the potential of the nerve ends to form painful growths (neuroma) causing significant pain. This surgery is not an option for horses in



which disease is so severe that there is concern that the deep digital flexor tendon may rupture, or the navicular bone may fracture. After surgery the horse is unable to feel sensation in the sole and heel region predisposing the animal to injury. Owners must be conscientious in cleaning the feet and watching for penetrating wounds after a neurectomy has been performed.

The treatments mentioned above are some of the most commonly employed, and usually a combination of procedures will be utilized to provide comfort and extend a horse's career and or life.

While navicular apparatus associated lameness remains a somewhat elusive and chronic problem for many horse owners, it is important to remember that the lameness can be managed in many cases. Based on the cause of the lameness, many treatment options are available and prognosis will depend on the specific diagnosis, such as soft tissue injury versus extensive bony change.

It is important to determine the extent and cause of the lameness before condemning your horse to what use to be the scarlet letter of navicular disease.

Parasite Resistance and Deworming: What Should We Do?

It has become apparent that there is a growing resistance of our common equine parasites to the current deworming products on the market. As it stands we do not have a novel anthelmintic ready to hit the market any time soon. It seems that best approach to address the resistance issue involves targeted deworming.

More and more people around the county have been including a fecal egg count in their deworming strategy. Fecal egg counts involve collecting a small bit of manure, which is soaked overnight, centrifuged and examined for eggs. It has been sug-

Designing a program around fecal egg counts will likely save horse owners money as they will end up deworming most of their herd less frequently.

gested that approximately 20 percent of the horses in a particular herd will carry 80 percent of the worm burden. Many of the other animals in the herd will, in fact, not have a worm burden high enough to be considered dangerous and those animals can be dewormed much less frequently. In the end, designing a program around fecal egg counts will likely save horse owners money as they will end up deworming most of their herd less frequently.

When designing a deworming pro-

gram using fecal egg counts, it is important to perform the egg count multiple times within the first year to determine which horses carry the highest burden.

We do recommend deworming all foals at 2 months of age to address Ascarids (round worms) and then performing a fecal egg count subsequent to that. If you have questions or wish to perform a fecal egg count on your horse please feel free to call and talk to one of our veterinarians.

Tailored Nutrition Helps Variety of Ailments

This fall, Dr. Martha Rasch, attended a three-day conference on equine nutrition, hosted by Purina Mills. Topics included research and development of veterinary diets, diet formulation, forage analysis, and proper horse feed selection. These sessions emphasized that a horse's gastrointestinal system can work in a variety of diverse ways with different feeds and how proper selection of products can help maximize an individual's metabolism. There are a variety of new and different grains and grain-alternatives on the market, allowing for a more personalized diet that is still balanced and safe.

For example, there are grains that are now tailored for equine obesity, Cushing's disease, muscle disorders, high and low energy, gastrointestinal dysfunction, and even in-hospital tube feeding. If interested, please call for information and advice concerning the best type and amount of feed for your horse.



We look forward to helping you maximize the potential of your horses and, if necessary, can aid in feeding them properly through a variety of disease conditions.

Foals Depend on Mother's Vaccinations for Good Health

Remember, in addition to vaccinations routinely given to your horse, brood mares require rhinopneumonitis boosters during their fifth, seventh and ninth month of gestation in order to help prevent abortions and weak foals. It is also important to vaccinate your brood mares one month prior to giving birth in order to boost immunity in the foals.

Foals receive all of their antibodies from their mother's first milk, or colostrum. By boosting all of the vaccinations that your mare normally receives one month prior to birth, your mares will produce better quality co-



lostrums, resulting in healthier foals. If you have any questions regarding vaccinations and your horse, please

call us and we would be happy to discuss an appropriate vaccination schedule that fits your horse's needs.

Teaching Hospital Offers Improved Equine Dental Care

This fall Dr. Alison LaCarrubba attended a special focus group specifically addressing the topic of equine dentistry, hosted by the Missouri Veterinary Medical Association. During the last decade we have seen quite a bit of change concerning the practices and attitudes associated with equine dentistry.

"Two floats and a bucket" just is not going to cut it any more. Our clients expect high quality care for their equine friends, and we are happy to be able to provide that care. Our annual dental examination includes a complete oral exam with a full mouth speculum allowing us to examine all of the teeth by feel, as well as by visualization.

Our speculum and power equipment allow us to address the day to day dental issues, such as sharp enamel points, as well as providing the ability to deal with more invasive problems, such as long hooks, and wave mouth. We



feel confident that a thorough dental examination and annual float is critical to the health and well being of our patients, and we are committed to providing that care.

Please contact the
Equine Clinic at the
University of Missouri
College of Veterinary
Medicine's Veterinary
Medical Teaching
Hospital at
573/882-3513 if you
have questions about
this newsletter or
equine health.

Contrast Enhanced CT Imaging Helpful in the diagnosis of difficult lameness

As we learn more about the causes of lameness in horses, it becomes increasingly apparent that many soundness issues are caused by injury to the soft tissues of the limb. Important soft tissues in the horse include tendons that help the limb flex and extend as well as ligaments that support the joints as they move and bear weight.

Radiographs (or X-rays) are of limited use in diagnosing problems caused by soft tissue damage. Ultrasound is helpful in many cases, but is confined to areas that the ultrasound can reach as well as limited fine detail of the tissues. Horses that have lameness that is unexplained after tradi-

tional radiographs and ultrasound may benefit from advanced diagnostics.

At the MU Veterinary Medical Teaching Hospital, we offer a procedure called contrast-enhanced computed tomography (CT). This CT examination gives us excellent detail of both bone and soft tissues. The procedure has been extremely helpful in diagnosing frustrating, unexplained lameness in performance horses. It can be done on an outpatient basis, although it does require general anesthesia. Results can help us treat soft tissue injuries and get horses back in the game.

Please give us a call and ask for details on this procedure!

The Toxic 10

By Charlie Jane Walrond and Tim Evans

Toxic plants are commonly plants that you may have growing in your pastures or around your barns, which may seem harmless, such as the sweet smelling clover horses love or the maple trees that give us beautiful fall foliage. However these plants can cause symptoms that

range from mild to deadly. Below are common toxic plants in Missouri to help you identify these plants and keep your horses a safe distance away. If your animal displays signs of toxicity you should contact the VMTH immediately. During clinic hours (8 a.m. to 5 p.m.) call 573-882-3513 and after hours call 573-882-4589.

Alsike Clover



Signs of toxicity:

Photosensitization, which is where the skin looks like it is sunburnt.

Blue-Green Algae



Signs of toxicity:

Weakness, depression, shock, colic, photosensitization, muscle tremors, paralysis, sudden death

Fungus Infected Fescue



Signs of toxicity:

Little to no milk production, prolonged gestation length, retained placenta, abortion

Maples



Signs of toxicity:

Dark brown urine, anemia

Milkweed



Signs of toxicity:

Weakness, uncoordinated walking, depression, trouble breathing, increased temperature, convulsions, dilated pupils, GI upset

Poison Hemlock



Signs of toxicity:

Uncoordinated walking, weakness, colic, salivation

Water Hemlock



Signs of toxicity:

Muscle twitches, seizures, convulsions, coma

White Snakeroot



Signs of toxicity:

Pulsing jugular veins, ventral edema, increased heart rate, sweating

Yew



Signs of toxicity:

Nervousness, uncoordinated walking, collapse, GI upset, decreased heart rate, sudden death

Fungus Infected Red Clover



Signs of toxicity:

Excessive salivation, tearing, urination, diarrhea



2010 **EQUINE CLINIC**

WHAT CAN **MU** DO FOR YOU?

Nov. 6

8 a.m. to 4 p.m.

**At the University of Missouri College of Veterinary Medicine:
Veterinary Medical Building W233 and Teaching Hospital Equine Clinic**

Referring Veterinarians Continuing Education

8 to 10 a.m. Minimally Invasive Surgery in the Horse
Presenter: Dwayne H. Rodgerson, DVM, MS, Diplomate ACVS

10 to 11 a.m. Update on Advanced Therapies for Treating
Joint, Tendon and Ligament Injuries
Presenter: David A. Wilson, DVM, MS, Diplomate ACVS

11 a.m. to Noon Update on the Diagnosis and Treatment of Equine Endocrine and
Metabolic Diseases
Presenter: Nathaniel T. Messer IV, DVM, Diplomate ABVP-Equine

Noon to 1 p.m. Lunch Discussion:
Updates on contrast enhanced CT, referral for laparoscopy,
arthroscopy, PRP, stem cells and radiation therapy.
Presented by multiple boarded specialists

1:30 to 4 p.m. Tours for owners and prospective clients

Reserve Your Place by Oct. 29!

To RSVP or for questions, contact
Becky Elias at 573-882-3513 or eliasr@missouri.edu