Do You Know What’s in Your Pasture?
Vanessa Mirk, DVM Student (Class of 2009)

Take a stroll through your pasture. What plants do you see? Are they all safe for your four-legged friend? Trees can be beneficial to horses by providing shelter from the cold winter winds and hot summer sun. Some trees are toxic to horses and should be avoided around and within pastures.

Poisonous trees are toxic to horses in different ways. Cyanide suffocates animals by making the red blood cells incapable of oxygen transport. This occurs in cherry (black cherry, chokecherry, and fire cherry) trees of the *Prunus* species. Leaves of these trees are particularly toxic when stressed or wilted as is the bark. Wilted leaves and bark produce cyanide and affect horses within a few hours of ingestion. Horses that ingest this tree will appear to have trouble breathing and show flared nostrils. They may lose bowel and urinary control, lack coordination, and tremble. A severely poisoned horse will drop to the ground, kick a few times, and then die.

Dead or wilted leaves of the Red maple tree, *Acer rubrum*, are also toxic to horses. The leaves are harmless until they fall from the tree and wilt. The toxin is an oxidant that destroys the red blood cells causing hemolysis (breaking open of red blood cells). This causes the blood to be incapable of transporting oxygen. Symptoms include depression, lethargy, increased rate and depth of breathing, increased heart rate, yellow or brown coloration of mucous membranes, dark brown urine, coma, and death. Treatments are limited and include stopping further absorption of the toxin and administering fluids, but a majority of horses die or are euthanized.

Black walnut trees, *Juglans nigra*, are common in pastures and for its use as bedding. Unlike some of the other trees mentioned, a horse does not have to ingest this plant in order for it to be toxic. Even a small amount can cause founder (laminitis) and necrosis of the hoof. The toxic agent, juglone, is found in the bark, wood, nuts, and roots of black walnut. Symptoms include depression, lethargy, reluctance to move, distal limb edema. Other signs include increased body temperature, pulse, respiration rate, abdominal sounds, digital pulse, and hoof temperature. Consumption of the shavings may also cause signs of mild colic. Symptoms usually disappear within a few days after shavings are removed.

Black locust *Robinia pseudacacia*, can be a problem if horses chew on the bark or on locust posts. The bark, leaves, sprouts, flowers, and seed pods contain the toxins glycoside (robitin) and phytotoxins (robin and phasin). Symptoms include loss of appetite, general weakness, depression, diarrhea, mild colic, paralysis, pupil dilation, cold extremities, laminitis, weak pulse, and rapid, irregular heartbeat. Most horses recover after several days or weeks, but in severe cases, death can result.
News & Notes

SVM Derby Day at Indiana Downs

…and coming around the back stretch...

Equine clients and veterinarians are invited to join Purdue veterinary school faculty, staff, students and alumni for a special day at the races at the Indiana Downs Race Track in Shelbyville, Indiana, Saturday, May 9, in celebration of the School’s 50th Anniversary. Entitled “Derby Day,” the special day at the track will feature two thoroughbred races named in honor of the School’s Golden Anniversary. At the conclusion of each race, Derby day participants will present the awards to the winning horse and jockey in the winners circle. The School’s Derby Day Committee named the first race the “Purdue Veterinary Medicine 50th Anniversary Derby.” The second race was named through a student competition and will be called the “SVM Continuum Classic.”

Registration is now open for this event!! Please visit this web site for information and the registration form: http://www.vet.purdue.edu/50thanniversary/Documents/derbysdays.pdf. The entry fee is $40 per person which includes lunch, a behind-the-scenes tour of the track and facilities, dinner, and the evening races.

San Diego Welcomes Purdue’s Finest

An estimated 75 alumni and friends attended the Purdue School of Veterinary Medicine’s first 50th Anniversary event, which was held December 8 in conjunction with the annual convention of the American Association of Equine Practitioners (AAEP). The reception guests heard from Dr. Willie Reed, Dean of the School, who thanked them for making an inaugural 50th activity a success. Dr. Reed says the School is proud of its alumni who have become equine specialists and established a strong track record of service to the equine industry. The evening included a special “50th anniversary quiz” for the alumni. Here is a quick Q-and-A to test your knowledge of the School’s equine-related history:

- How many colic surgeries were performed at the School in 2007? 80. Which PUSVM faculty member was a driving force in the establishment of the American College of Veterinary Surgeons residency program? Dr. Jack Fessler, professor emeritus of large animal surgery.

Recruiting Horses for a Study on Heaves:

Starting this summer, we are conducting a research project at Purdue University School of Veterinary Medicine evaluating the mechanisms of inflammation in Recurrent Airway Obstruction (RAO), heaves. We are looking for horses to participate in the study. The criteria for inclusion in the study are a history of chronic respiratory disease (> 6 months) with clinical signs such as increased respiratory rate and effort and intermittent cough. In addition to the RAO-affected horses, we would also like to include control horses from the same farms.

The study will require one visit to Purdue University. During this appointment both horses will receive the same testing: physical examination, pulmonary function testing, bronchoalveolar lavage, and a blood draw. Treatment and management recommendations will be made for the RAO horse. If desired, a recheck appointment for the RAO horse may be made for one month later. All appointments and testing (including the one-month recheck) will be provided free of charge.

For more information about the study, or to participate, please call Purdue University Large Animal Hospital at (765) 494-8548 and ask for Dr. Laurent Couëtil or Dr. Marybeth Mikovic.

Mosquito Season: Protection Beyond Vaccination

Amber Boring, JVM Student (Class of 2009)

Summertime means sunny trail rides, cricket serenades, and the buzz of the cicadas. But another buzz begins that is not so welcome; the buzz of the mosquito. These pesky bugs leave us itchy and annoyed, but their bite can also transmit diseases that make us and our animals very sick. Horses in the United States are susceptible to three main diseases that are transmitted by mosquitoes: Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), and West Nile Virus (WNV).

Humans can also become infected with these three diseases following the bite of an infected mosquito. In horses, EEE and WEE cause swelling of the brain and neurologic signs, which can lead to death. Eastern Equine Encephalitis is the most dangerous, with 75% to 95% of horses infected succumbing to the disease within 2-3 days of the onset of clinical signs. West Nile Virus is a fairly new disease in the United States, with the first case being reported in 1999. It is also a potentially fatal disease of the neurologic system. Not even our barn dogs are safe from mosquito-borne disease, as heartworms could not complete their life cycle without the mosquito. Fortunately, there are good vaccines available to protect our equine partners, and monthly heartworm preventatives to protect our dogs. However, there are no human vaccines for EEE, WEE, or WNV. Here are some simple steps you can take to protect yourself and your animals from mosquito-borne diseases.

Tips to control mosquitoes in your environment:*

- Eliminate standing water from your neighborhood. Mosquitoes need water for 3 out of 4 of their life stages.
- While in the barn, fans may help to prevent the mosquitoes from entering the barn.
- Water troughs should be dumped and refilled at least once per week. The larvae can sometimes be seen swimming in the water troughs. Getting rid of them before they become adults is your best bet.
- Bring your horses into the barn during dusk and dawn, when the adult mosquitoes are the most active.
- In addition to the RAO-affected horses, we would also like to include control horses from the same farms.

*These tips are no substitute for vaccinating your horses against EEE, WEE, and WNV. If you find a dead bird, inform your local health department, but do not touch the bird.

When you start to hear the crickets and cicadas announcing the start of summer, remember to do your part to protect yourself and your pets from mosquito-borne disease.
Some think of horses as big dogs. In regards to some horses’ personalities and loyalty that may be true, but when it comes to medicating horses with the same types of medications as small animals, or humans, the task becomes much more expensive and difficult. The compounding of drugs has made it easier and more affordable to medicate horses with special needs. But do you know when it is appropriate to use the original medication and when to use the compounded formula? Are you also aware that the compounded drug may not be the same strength or have the same efficacy of the original?

As regulated by the Food and Drug Administration (FDA) and American Veterinary Medical Association (AVMA), compounded drugs can only be made when it is medically necessary for the patient, where there is no approved product available, or the preparation cannot be made by the FDA-approved drug. If a drug formulation that was previously approved for horses has been pulled from the market by the parent drug company, it may then be legally compounded. An example of this type of compounding is oral flunixin meglumine powder. If you have a good standing relationship with your veterinarian and your horse requires a special form of medication, your veterinarian may contact a compound pharmacy that is properly licensed with a prescription of the FDA drug that can be made into a formula suitable for your horse. Prescribing a compounded drug cannot be taken lightly. While the approved drugs may not be as easy to administer, their stability, purity, and strength are accurate and provide the best accuracy in dosing. Compounding pharmacies that do not require a prescription for a drug are working illegally and the formulation, ingredients, and efficacy of the drug may not be guaranteed. Only a licensed veterinarian or pharmacist may compound drugs when it is deemed necessary for the specific formulation. These formulations will only be good for the duration of the prescribed treatment, and should only be used on the horse for which it was made.

The Purdue University School of Veterinary is collaborating with leaders in the Indiana equine industry on the design and operation of a new regional equine diagnostic and surgical center. Plans call for the School of Veterinary Medicine to operate the facility, which would be situated in proximity to Hoosier Park and Indiana Downs to facilitate immediate veterinary care for racetrack clientele.

The School views this collaboration as a means of enhancing its ability to provide equine health services to the horse racing industry in Indiana. Envisioned as a regional equine diagnostic and surgical center, the new facility would house a board-certified equine surgeon who could respond immediately to any equine medical needs that arise at the track. Additionally, the surgeon’s expertise and the Center’s technologically advanced medical equipment would be made available to help area veterinarians in treating their patients. The facility will be designed to offer a range of equine health services including emergency veterinary care, surgery, internal medicine, advanced diagnostic imaging, advanced shockwave therapy, video endoscopy, and ultrasound imaging, with the provision for adding more equine services in the future.

The Purdue University School of Veterinary Medicine, and in particular, the equine clinicians, are extremely excited about the prospects for this new relationship with the equine racing and sport horse industry in Indiana. Stay tuned for additional information as plans progress.

Another plant commonly found in the pasture that may cause concern is Red clover because it causes “clover slobbers.” Slobbers is not caused by the actual plant, but by a fungus, Rhizoctonia leguminicola, that grows on the plant and produces slaframine, a mycotoxin. Some horses may be more susceptible than others to the mycotoxin which is why some horses may be more affected than others. The fungus flourishes in cool, wet, and humid conditions especially during late spring and early summer and appears as tiny black specks on the clover. Slobbers is not a life threatening problem. To “cure” slobbers, remove the horse from the pasture and ensure adequate water intake.

There are many more plants that are toxic to horses than discussed here. In general, horses are not likely to eat poisonous trees if they have adequate forage available. Practicing proper pasture management is important. To be safe, owners should learn to identify toxic plants and check the pasture regularly. If you have any questions or are not sure if your horse has ingested a toxic plant, contact your veterinarian or your local extension specialist.
10 Tips for Saving Money in Tough Times
Brooke Lechlitner, DVM Student (Class of 2009)

In recent months, the economy has been on everyone’s mind. For most people, discretionary spending has decreased drastically and saving money is more important than ever. Owning horses, especially pleasure horses, can be quite a financial drain. Follow these money-saving tips to make your beloved horse more of a blessing and less of a burden.

1. Get together with neighbors to share appointments with the veterinarian. Many veterinarians are happy to split the trip charge among owners. It saves them time in travel and money on gas.

2. Skip the grain. Unless your horse is a hard-working performance horse, chances are your horse is getting far too many calories with the scoop of grain morning and night. The average horse should get what it needs from good quality hay and grass pasture. For the average horse, good quality hay and grass pasture is all he needs. Consult with your veterinarian about your horse’s specific nutritional needs.

3. Skip the supplements or only give what is necessary. The products they like and what is best for your horse. For most people, discretionary spending has decreased drastically and saving money is more important than ever. Owning horses, especially pleasure horses, can be quite a financial drain. Follow these money-saving tips to make your beloved horse more of a blessing and less of a burden.

4. Implement a pasture rotation system. If you have the space, divide up your pasture into several small areas, and rotate them once a month. This will give the grass in the unused pasture time to rest and grow. If done properly, you may not need to feed hay, or you may be able to get away with feeding less.

5. Feed hay off the ground. By feeding off the ground, your horse is more likely to eat all of the hay and less will be lost to being trampled in the mud and urinated/defecated on. As an added bonus, this will help keep things sanitary!

6. Get the best deal on supplies and tack. Consult the internet when it’s time for a new saddle or even new sponges, etc. Ebay, craigslist, and Amazon often have amazing deals from people selling used tack. Hit up your local Dollar Store for everyday supplies.

7. Change the stall bedding. Shredded paper is a favorite with some horse owners and can be purchased from industrial paper shredding companies or sheet paper can be bought cheaply and shredded with an industrial shredder at home. It’s less dusty and much cheaper than packaged shavings. Shredded paper is a favorite with some horse owners and can be purchased from industrial paper shredding companies or sheet paper can be bought cheaply and shredded with an industrial shredder at home. It’s less dusty and much cheaper than packaged shavings.

8. Consult with your farrier and veterinarian about whether your horse needs shoes. You can save a bundle if your horse gets shoes that he doesn’t really need.

9. If you board your horse, ask if you can trade work for board. Helping out around the barn can save the stable owner the cost of hiring another hand, so they may be glad to have you work off some or all of the cost of boarding.

10. Continue having your veterinarian come for vaccines, deworming, and dental care. Skipping care like this can cost a lot in the long run. If your horse becomes ill with a disease that vaccines prevent, you will spend a lot of time and money (and heartache) nursing him back to health. Regular dental care and deworming results in a happier, healthier horse. You cannot put a price tag on that!

Do My Horses Need Annual Dental Exams?
Tass Clark, DVM Student (Class of 2009)

Just as humans need annual to biannual dental exams, so do horses. Veterinarians feel it is very important for horses to receive regular annual dental exams. Up until the past decade equine dental care was somewhat neglected. Since then, there have been significant advances and renewed interest in equine dentistry. It has been suggested by some that dental floatation (filling or rasping of your horses teeth) is the most common dental procedure performed in horses.

Horses have hypsodont teeth, whereas humans have brachyodont teeth. Hypsodont dentition is characterized by high-crowned teeth and enamel, which extends past the gum line. This provides lots of extra material for wear and tear, as hypsodont teeth continue to erupt at about 0.11-0.16 inches (3-4 mm) per year. Brachydont dentition is characterized by low-crowned teeth.

Modern dentistry has played a major role in improving the quality and quantity of our horse’s lives. Preventive dentistry plays a major role in a horse’s welfare through the early recognition and treatment of potentially clinically significant disease. Furthermore, the main goal of having horses receive annual dental exams is to check for, and prevent various dental abnormalities. The most common ones being sharp enamel points, hooks (steep overgrowth of tooth), ramps (gradual overgrowth of tooth), wave mouth (when several cheek teeth are of different height), cheek tooth (when each cheek tooth is severely sloped), and displaced cheek teeth, to name a few. The sharp enamel points are found on the buccal (cheek) side of the upper arcades and on the lingual (tongue) side of the lower arcades of the cheek teeth. These are often associated with soft tissue injuries such as ulcers, which tend to cause discomfort to the horse. Hooks are commonly found on the horses first and last cheek teeth.

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