

Blue-Green Algae Poisoning

Blue-green algae, or cyanobacteria, poisoning occurs when horses or other animals ingest water containing excessive growths of toxin-producing blue-green algae species. Of the more than 2,000 identified blue-green algae species, at least 80 are known to produce toxins poisonous to animals and humans. Many more species and toxins have yet to be identified. Heavy blue-green algae growth or blooms occur when water sources are contaminated with excessive nutrients (especially nitrogen and phosphorus) and weather conditions are hot and dry. In farm settings, stagnant ponds contaminated with fertilizer run-off or direct manure and urine contamination are prime places for blue-green algae blooms to occur.

The most common species of blue-green algae in North America associated with poisoning are *Anabaena*, *Aphanizomenon*, *Oscillatoria*, and *Microcystis*. Not all strains of these genera are capable of producing toxins, and in those that do toxin production is sporadic. Environmental factors such as water temperature, sunlight, water

pH, and nutrient concentration affect when toxins are produced. Intoxications are most common in the summer and early fall when water temperatures are warmest.

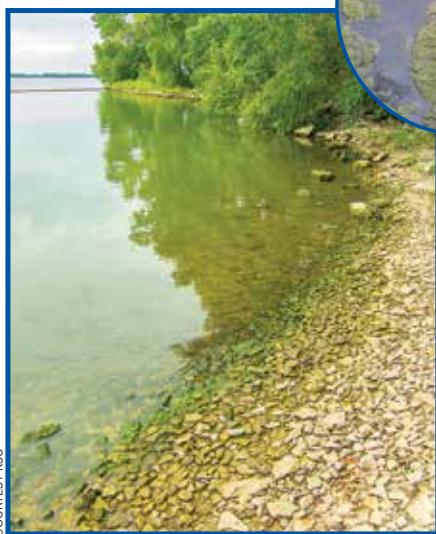
These algae can produce several major toxins. Some produce potent neurotoxins that cause clinical signs such as muscle tremors, respiratory distress, seizures, profuse salivation, diarrhea, and death within minutes to hours. Others produce hepatotoxins (affecting the liver) that can cause rapid death or a more delayed death after signs of acute liver failure occur. Photosensitization, a skin condition affecting non-pigmented areas of skin, can occur in animals that survive the acute stages of liver damage. Other types of algal toxins occur in other regions of the world.

Blue-green algae toxins are released when algal cells are damaged and die in the water (e.g., after water is treated with an algaecide such as copper sulfate), or when ingested water reaches the animal's digestive tract and disrupts cells, releasing the toxins.

Most animals exposed to blue-green algae toxins die acutely. Treatment is supportive and symptomatic. In some cases animals recover, but death typically occurs so quickly that the animals are found dead near the water source.

It is impossible to tell visually if a water source contains blue-green algae or to determine which species are present without laboratory analysis. Blue-green algae blooms often impart a blue-green sheen to water, but not always, and bluish-green biomass accumulations in water are not always blue-green algae. Even when blue-green algae are present, toxic compounds may or may not be produced. Some water testing laboratories and veterinary diagnostic laboratories can test water for the presence of blue-green algae and several of its toxins.

Preventing poisoning is important.



Blue-green algae can produce deadly toxins.

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Upcoming Events

The following steps can help minimize the risk of algae poisoning in your animals:

- Provide constant access to clean, fresh water, and fence off or otherwise prevent access to stagnant, scummy ponds. Do not allow animals to contaminate the water with feces and urine.
- Prevent fertilizer or manure run-off into water sources.
- If a water source is treated with an algaecide such as copper sulfate, prevent animal access to the water for at least a week or longer to allow degradation of any released toxins.
- When traveling with animals, do not allow them to access murky, scummy water sources. **UK**

>Cynthia Gaskill, DVM, PhD, clinical veterinary toxicologist at the University of Kentucky Veterinary Diagnostic Laboratory, provided this information.

Parasite Egg Shedding on Central Kentucky Horse Farms

Researchers from the University of Kentucky Gluck Equine Research Center recently conducted a study on strongyle parasite egg count values in horses on 25 Central Kentucky farms. Data from the study showed the benefit of establishing strongyle egg counts to determine the need for treatment.

The trend for parasite control in horses has long been to deworm on a frequent basis, although it is well-known that this might lead to widespread drug resistance. Typically, owners treat herds without first performing parasite egg counts to help determine which individual horses need treatment.

Therefore, the researchers aimed to investigate the strongyle egg count status on a large number of horses on a regular deworming program, said Gene Lyons, PhD, professor in classical parasitology at the Gluck Center.

A total of 1,300 mares of various ages participated in the study (most were Thoroughbreds, while the rest were Standardbred and mixed light breeds). The goal was to establish a strongyle egg count profile on each mare based upon age, number of egg count positives, and level of egg shedding.

"Findings from the study clearly showed the value of performing the EPG (eggs per gram) status on horses," Lyons said. "The most important result of this research was that the majority of Thoroughbred and Standardbred mares had no or low egg counts. Since these horses were already on a regular deworming program, there would be no obvious reason to give them extra treatment."

The majority of mares had no or low egg counts.

Upon reviewing the results of this particular study, the researchers also found:

- Thoroughbreds had the lowest prevalence of positive egg counts at 32%. The youngest age group (3-5-year-olds) showed the highest strongyle counts, while the 6-10-year-olds and older had lower infection rates.
- 48% of the Standardbreds were positive for strongyle egg count. For both Thoroughbreds and Standardbreds,

about 60-70% had low egg counts below 200 eggs per gram (EPG).

- In contrast, 77% of the mixed light breed mares were positive for egg count. The infection rates for this group were highest in 3-10-year-olds and lowest for the older age groups, but significant for all the age groups. More than 37% of the mixed light breed mares had values higher than 500 EPG.

The researchers considered management aspects as part of the reason why Thoroughbreds and Standardbreds had lower levels of parasite infection compared to the smaller group of mixed light breeds.

The mixed light breeds tended to graze on more overpopulated pastures with less intensive management, whereas the Thoroughbreds and Standardbreds tended to have ample pasture, Lyons said. All breeds were on a routine deworming schedule, and the research team therefore suggested management efforts could influence strongyle egg counts.

"While our data clearly showed that different horse management systems affect the parasitic status of horses, an association between the breeds of horses and the prevalence of parasite infection could not be established," Lyons said. **UK**

>Shaila Sigsgaard is an editorial assistant for the Bluegrass Equine Digest.

Using Oxytocin to Suppress Estrus in Mares

Researchers from the University of Kentucky (UK) Gluck Equine Research Center evaluated the effectiveness of a hormonal treatment (oxytocin) in preventing mares from showing estrus (heat) for an extended period of time.

Currently, owners must give mares an oral hormonal (progesterone) product (ReguMate) every day to prevent them from showing estrus. This is both labor-intensive and expensive. In the UK study researchers

investigated a simpler, less-costly approach based on injecting oxytocin. Earlier studies had shown oxytocin to be effective in suppressing estrus in mares but it required frequent injections. The goal of the current project was to determine if fewer oxytocin injections could still suppress estrus effectively.

"This work is a huge leap forward in unfolding the mechanisms behind the effects of chronic oxytocin treatment in mares," said Ed Squires, PhD, Dipl. ACT (hon.), professor and executive director of the UK Gluck Equine Research Foundation. "Treatment with oxytocin may be one option to prevent the mare from going

"We tricked the mare into producing her own progesterone longer in the cycle."

Dr. Ed Squires

into heat and could be the least costly method of suppressing heat in show horses and possibly racehorses."

A mare's normal cycle is 21 to 22 days long, as measured by counting days between ovulations. The length of time the mare is in heat varies, but is generally four to seven days. Once a mare ovulates a follicle, the corpus luteum (CL) forms on the ovary and produces progesterone, which prevents the

mare from coming back into heat for about 14 days. This phase of the mare's cycle is called diestrus.

While some mares' behavior alters very little when they are in heat, others exhibit signs of heat such as an elevated tail and frequent urination, among others. These attitude changes might not pose physical problems, but they could potentially distract and impair a mare's overall performance in the

Oxytocin to Suppress Estrus

show ring or on the racetrack. Horse handlers, therefore, often prefer to suppress estrus in mares to prevent potential behavioral problems, Squires said.

For the study, mares received oxytocin daily on Days 8 to 10, 8 to 12, or 8 to 14 after ovulation. The researchers evaluated the mechanisms behind treatment with oxytocin that would result in continual production of progesterone from the CL on the ovary. Death of the CL occurs in the absence of pregnancy at the end of diestrus phase, while oxytocin treatment prolongs the period the mare is not in heat. If a mare does not become pregnant, prostaglandin (a hormone coming from the uterus) release normally causes the CL to die and the mare enters a new cycle. However, several previous studies have confirmed that administering oxytocin after ovulation prolongs the length of time the CL in mares continues to produce progesterone.

"As research has previously proven, we found oxytocin administration when given eight days after ovulation was effective in preventing the corpus luteum on the ovary from dying, and heat-related signs were reduced accordingly in these mares," Squires said. "However, the oxytocin had to be given for several days to get this response. We were not able to shorten the number of days oxytocin was given and still have the mare stay out of heat for an extended period of time."

The researchers also collected tissue from the endometrium (uterus lining) to evaluate the cellular changes in the uterus with oxytocin treatments from Days 8 to 14 after ovulation.

They found that administering oxytocin regulates an enzyme called cyclooxygenase 2, preventing prostaglandin production responsible for the death of the CL. Thus, oxytocin injections allowed the CL to continue producing progesterone and the mare to stay out of heat.

"Instead of having to give the mare injectable or oral progesterone as a supplement, we tricked the mare into producing her own progesterone longer in the cycle, but at this point we still need further studies to determine if the number of injections can be decreased perhaps by giving a longer acting oxytocin," Squires said. **UK**

>Shaila Sigsgaard is an editorial assistant for the Bluegrass Equine Digest.

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Broodmare Nutrition: Preparing for Fall and Winter

All broodmares should have their body condition assessed regularly, as mares in good body condition have a stored fat reservoir they can use during cold winter weather. Further, good body condition helps barren and maiden mares establish normal cycles sooner in the breeding season and results in higher conception rates. Similarly, mares in good body condition at foaling are easier to rebreed than thin mares.

Owners can usually assess a horse's body condition by evaluating the amount of fat deposited on the ribs, along the neck and spine, and behind the shoulder. The typical scoring system uses a 1 to 9 scale, where a horse with a score of 1 is emaciated and 9 is obese. A horse with a condition score of 5 is considered to have "moderate" body condition. Mares that enter the breeding season with a condition score below 5 have reduced reproductive efficiency. Therefore, the target body condition score for broodmares is at least 5. While there is no advantage to a mare having a very high score (being very fat), if she has a score of 6 in late fall she will have a



Good condition results in higher conception rates.

Broodmare Nutrition

small reserve of fat during winter when she will be burning extra calories to stay warm.

Horses with body condition scores between 5 and 6 have ribs that can be felt easily, but that are not visible. In addition, these horses have enough fat cover over their topline that the loin area is relatively flat. Their necks are not thin and blend smoothly into the shoulder. A horse with a score higher than 7 has ribs that are difficult to feel and so much fat along the spine that there is a deep crease in the loin area. On the other hand, if the spine is visible along the loin area and the ribs are also visible, then the body condition score would be closer to a 4. If more of the mare's bony structures are visible (e.g., the shoulder or hip bones are prominent) then the body condition score would be below a 4.

Many mares that nursed a foal during

If a mare is overweight, winter is a good time for weight loss because the pasture is less nutritious and the cold weather increases calorie use.

the summer and early fall as well as mares used for strenuous competitive activities during the summer (racing, endurance competition, polo, etc.) often enter the fall with condition scores below 5. These horses will need to consume extra calories in the fall to ensure they are in good body condition for the next breeding and foaling season.

Mares that have been grazing abundant, high-quality pasture all summer and fall might have body condition scores above 7. Although high condition scores have not been shown to negatively affect reproduction, they might increase a mare's risk for limb and hoof problems, including laminitis. If a horse is overweight, winter is a good time for weight loss because the pasture is less nutritious and the cold weather increases calorie use.

Pasture and Hay

As pasture quality and quantity decline in late fall, owners should supplement mares' forage intake with hay. Some horse managers in Central Kentucky begin feeding hay to pastured mares beginning Nov. 1, but make a decision based on the condition of your individual mares and pasture. If the mares are losing body condition, the nutrients available to them are likely insufficient. Even if the mares seem to be maintaining body condition but the pasture is showing signs of overgrazing, it is probably time to offer hay. Providing hay in the fall will serve two purposes: First, it ensures mares will have enough to eat; and second, it might reduce overgrazing of the pasture. Overgrazing in the fall can weaken the plants, thus reducing their vigor the next spring and summer. Overgrazing can also allow more weeds to invade the pasture.

The best way to evaluate whether pastured mares need hay is to put some in the pasture. If the horses ignore the hay, then the pasture is probably meeting their forage needs. If they eat some but not all of the hay, then the amount of hay fed can be reduced until the amount that remains at the next feeding is small. If the horses devour the hay rapidly, the pasture quality is clearly declining and the horses need hay.

Many types of hay are acceptable for broodmares, but the main selection characteristics should be safety and nutrition. Most tall fescue in the southeastern United States is infected with a fungal endophyte that can negatively affect mares in late gestation. Unless tall fescue hay has been tested and is known to be endophyte-free, it should not be used for mares, especially pregnant mares. Any hay that is fed to horses should also be free of toxic weeds, dust, and mold.

Legume hays (e.g., alfalfa and clover) are higher in nutrients than most grass

STUDENT SPOTLIGHT

BREANNA GAUBATZ

From: Syracuse, New York

Degrees and institute where received:

**B.S. Animal Health Technology,
Murray State University, 2010**

**M.S. Veterinary Science, University of
Kentucky, 2013**



Breanna Gaubatz came to the University of Kentucky to combine her love of horses with continuing her education. With the Gluck Equine Research Center's reputation for equine research, it seemed like a perfect fit in the heart of horse country, Gaubatz said.

Gaubatz' research focused on equine protozoal myeloencephalitis (EPM), a progressive neurologic disease of horses caused by the parasite *Sarcocystis neurona*. More than half of the horses in the United States are seropositive for *S. neurona*, while only 0.5-1% of horses actually develop the disease.

"My thesis research consisted of two projects that were conducted to identify factors involved in the development of EPM in horses," she said. "The first project explored a possible genetic susceptibility to EPM by attempting a genome-wide association study (GWAS) using DNA from archived tissue of definitively-positive EPM horses."

In her second project she evaluated an artificial infection method in creating a reliable equine EPM disease model. She also assessed the immune systems of the horses in the study for their response to the challenge infection, she said.

Hopefully, the discovery of factors involved with EPM development could lead to better diagnosis, treatment, and ultimately prevention of this devastating disease in horses, Gaubatz said.

What Gaubatz plans next in her career is still up in the air. "At this point, I am unsure if I will pursue a doctoral degree in equine research or seek a veterinary degree. Currently, I am gaining experience working in the field of equine veterinary medicine," she said. **UK**

>Shaila Sigsgaard is an editorial assistant for the Bluegrass Equine Digest.

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hays (timothy, orchardgrass, etc.). In a recent study conducted at the University of Kentucky (UK), Thoroughbred mares in mid and late gestation were able to eat enough good-quality alfalfa hay to meet their protein requirements. Mares fed timothy hay were able to eat enough hay to meet their protein requirements in mid-gestation, but not in late gestation. When applied to practical feeding situations, these results mean horses fed good-quality alfalfa hay will require less concentrate (sweet feed or pellets) than horses fed timothy hay.

In addition to considering the type of hay to use, a broodmare owner might want to estimate how much hay he or she will need to provide during the fall and winter. In the UK study mares consumed about 2-2.25 pounds of hay for each 100 pounds of body weight. So a medium-sized Thoroughbred mare (1,250 pounds) would consume about 25-28 pounds of hay daily. Remember that this figure represents the amount of hay consumed, not the amount fed. There will always be some wasted hay, so the amount fed should be slightly greater than the amount to be consumed. However, the mares in the study received only a small amount of concentrate each day, and mares fed greater amounts of concentrate would need less hay. If hay is fed at 30 pounds/horse/day from Nov. 1 through March 30, then a little more than two tons of hay will be needed to feed the medium-sized mare over this period. If the hay feeding period is longer or shorter, or the mare is expected to eat more or less hay, then the total amount of hay would change.

Concentrates and Supplement Pellets

In addition to pasture and/or hay, broodmares are usually fed either a commercially manufactured concentrate or supplement pellet (sometimes called a balancer pellet). The term "concentrate" refers to a feed that is a concentrated source of calories. Common concentrates such as oats, corn, and other cereal grains are good calorie sources but they are low in calcium and other necessary nutrients. Commercially manufactured concentrates usually include cereal grains, but they also contain additional nutrients. If a concentrate is formulated for a broodmare, the level of nutrient supplementation will be targeted to meet her needs. Concentrates are added when the forage portion of the diet does not provide enough calories to meet a mare's needs. Most Thoroughbred-type mares should receive 5-10 pounds of concentrate in late gestation. Mares from small, thrifty breeds will usually be fed less concentrate in late gestation.

Supplement pellets are concentrated sources of vitamins, minerals, and sometimes protein. They are fed in small amounts (usually 1-2 pounds per day) when the pasture or hay provides all the calories a mare needs. For example, if a mare can maintain a condition score of 6 on pasture or hay alone, then she does not need the extra calories provided by a concentrate. But, she does need many of the minerals provided in the supplement pellet. Supplement pellets are not needed if a mare is getting at least 4 pounds of a commercially manufactured broodmare concentrate. However, a supplement pellet can be combined with a plain cereal grain (such as oats) if an owner prefers not to use a commercially manufactured feed. [UK](#)

>Laurie Lawrence, PhD, a professor in the Department of Animal and Food Sciences at the University of Kentucky, provided this information.

WEED OF THE MONTH

Common name: Henbit, *Lamium amplexicaule* L.
Purple deadnettle, *Lamium purpureum* L.

Life Cycle: Winter annual

Origin: Europe

Poisonous: No



Henbit (left) and purple deadnettle

Henbit and purple deadnettle are winter annual species of the same genus, and people frequently confuse the two. Both species are often called henbit. These weeds germinate in the fall and sometimes in the spring. They are found throughout the eastern United States. These weeds thrive in both cool-season and warm-season forage grasses. Both species also grow in fine turf, orchards, gardens, landscapes, and cultivated crops.

Henbit flowers are pink to red and occur in clusters of 6 to 10 inches tall in the upper leaf stalks. Purple deadnettle flowers occur near the tops of the plant and are less purple than henbit flowers. The most striking difference is the upper leaves and stems of purple deadnettle are very red in appearance.

These weeds are relatively easy to control with several herbicides; however, mowing is ineffective. Consult your local Cooperative Extension Service personnel for herbicidal control in your area. [UK](#)

>William W. Witt, PhD, a retired researcher in Plant and Soil Sciences, provided this information.

Planning for Winter on Kentucky Horse Farms

Planning for winter now can help Kentucky horse owners prevent cold-weather horse care inconveniences later. University of Kentucky (UK) experts offer several recommendations for winter preparation, such as anticipating hay purchases for the season. Calculate needs ahead of time and place orders with hay producers for the amount of hay you will need for the winter feeding period.

"The hay supply may get tight if people start buying," said Bob Coleman, PhD, PAS, associate director for undergraduate education in equine science and management and extension horse specialist at the University of Kentucky. "It's more of a national marketplace now, and in other areas of the country hay could be in short supply. I'd have hay sourced soon."

Planning for Winter

Plan how and when the hay will be delivered and stored throughout the winter. Clean hay storage areas to ensure nothing will attract raccoons or other vermin. Remember to store hay in a building that has all-weather access.

"Test hay for quality as soon as it is delivered if a test is not provided when the hay is purchased," said Tom Keene, hay specialist in UK's Department of Plant and Soil Sciences. "Buy hay by the ton if at all possible and require certified stamped weight."

Other recommendations include:

- Building a high-traffic area to reduce wasted feed, muddy areas, and erosion. "They make it easy to feed and easy to clean," Coleman said. "Feeding hay on the ground can waste up to 50% of the hay offered, which can almost double expenditures. This also means looking into getting a suitable feeder to use this winter." For more on high-traffic pads, see UK Cooperative Extension Service publication "[High Traffic Area Pads for Horses](#)."
- Checking that all waterers, hydrants, and pipes are fully functioning. Insulate or use heat tape if necessary, and consider installing additional waterers if needed. "You want to be at capacity, not under or over, to efficiently move water through to prevent freezing," Coleman said. "It's not much fun to thaw out a frozen waterer."
- Assessing your horses' nutritional

needs and body condition scores (BCS). "Determine each horse's BCS, keeping in mind that scores of 5 to 6 are fine," Coleman said. "This could mean increasing, maintaining, or restricting feed, depending on the horse's BCS. Making changes to a horse's BCS is much easier in the fall than trying to feed to gain condition at a time when maintenance requirements are increased due to cold, wet, and windy conditions in January or February. This is particularly true for horses that are maintained outdoors."



PHOTOS.COM

Have your winter hay sourced early.

Fall is an optimum time to establish many plants, shrubs, and trees. Rick Durham, extension professor and coordinator for the Kentucky Extension Master Gardener Program in UK's Department of Horticulture, advised the following:

- If applying fertilizer to pastures in the fall to promote growth of cool season grasses, try to avoid fertilizing around trees and shrubs until after they have gone dormant (lost their leaves) and

avoid fall fertilizing of perennial plants altogether. Fertilizing too early, especially with nitrogen, might trigger a late flush or growth that will predispose plants to cold weather injury.

- Avoid mulching too deeply; a 2- to 3-inch depth is ideal. Also, pull mulch away from the base of trunks; do not pile mulch around trunks as this can lead to disease problems on the trunk and rodent issues around the plants.
 - Diseased or broken branches and limbs can be trimmed at any time, though these issues might become more noticeable after trees and shrubs lose their leaves. Leave most of the routine pruning, however, until late winter/early spring of next year.
- Coleman's barn and equipment upkeep tips include:
- Cleaning feed and tack rooms, stalls, and aisles thoroughly using a broom and/or pressure washer to remove accumulated grime, cobwebs, and dust. Winter tends to be dry, so eliminate as much dust and dirt as possible before doors and windows are closed tight.
 - Pressure-washing exterior windows and the outside of barns. Touch up paint and sealants where necessary, and caulk around doorways and windows. Rake or blow leaves and debris away from building foundations.
 - Sharpening and tuning up chainsaws and other equipment that might be needed during winter. **UK**

>University of Kentucky Agricultural Communications Services provided this information.

University of Kentucky Ag Equine Programs



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New Real-Time PCR Assay for Diagnosing Potomac Horse Fever

*N*euroickettsia risticii, the causative agent of Potomac horse fever (PHF), causes fever, anorexia, leukopenia (reduced white blood cell numbers), and occasional diarrhea in horses and can be fatal in up to 30% of cases. Exposure is through accidental ingestion of the metacercarial (encysted) stage of a trematode (parasite) within its insect host (such as mayflies). Veterinarians believe horses are infected through inadvertently ingesting insects that land in drinking water. The University of Kentucky Veterinary Diagnostic

Laboratory (UKVLD) has detected a high number of positive cases this year, possibly due to the increased summer precipitation.

The veterinary diagnostic laboratory can help diagnose PHF. A complete blood count might reveal a transient leukopenia in the early stages. A single positive indirect fluorescent antibody (IFA) test for PHF indicates exposure to the agent. Paired samples collected two weeks apart with a fourfold rise in titer is evidence of an active infection. On live animals, a PHF PCR assay should be performed on EDTA blood (i.e., blood collected in a tube containing a chelating agent and anticoagulant) as well as a fecal sample, as the presence of the organism in blood and feces might not temporally coincide.

The UKVLD has developed and implemented a new real-time PCR assay, which is quicker and more sensitive than existing tests.

Specimen To confirm suspect cases, the UKVLD recommends providing 10 mL of anticoagulated blood in EDTA tubes (purple top) and either feces (at least 5 grams) or a fecal swab for each animal tested using real-time PCR analysis. Please use an appropriate specimen container—feces in gloves can no longer be accepted. Screw-cap tubes are preferred.

Fee and schedule The fee is \$35 in-state and \$52.50 out-of-state total for both samples. Turn-around is one to two working days. The test is run Mondays through Fridays.

Please call 859/257-8283 for further information. [UK](#)

Walter W. Zent Mare Reproductive Health Facility Dedication Ceremony



More than 125 people attended the Oct. 15 dedication ceremony for a research facility at UK's Maine Chance Equine Campus that was renamed the Walter W. Zent Mare Reproductive Health Facility in honor of Zent, a veterinarian and former partner at Hagyard Equine Medical Institute. Zent served on the Gluck Equine Research Foundation's Board of Directors from 2000 to 2012 and as chair from 2006 to 2012.

2014 UK Equine Showcase, Breeders' Short Course Scheduled

University of Kentucky Ag Equine Programs will host the UK Equine Showcase Feb. 7 and the 5th Annual Kentucky Breeders' Short Course Feb. 8-9, both at the Four Points Sheraton, 1938 Stanton Way, in Lexington.

The UK Equine Showcase, now in its third year, will highlight the university's current equine programs and relevant industry findings. It will run from 1-5 p.m. with a light reception following.

The 5th Annual Kentucky Breeders' Short Course is an in-depth program on equine reproduction and horse management issues running from 8 a.m. to 5 p.m. on Feb. 8, with lunch provided. New this year, an in-depth reproductive wet lab will also be offered on Feb. 9 to a limited number of participants who want a hands-on educational opportunity led by some of the equine industry's foremost experts.

"We are pleased to again offer these educational events, which have grown in popularity over the past several years," said Jill Stowe, PhD, event co-chair and director of UK's Ag Equine Programs, part of the College of Agriculture, Food and Environment. "The showcase and short course really highlight the breadth and depth of expertise found at UK."

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UK Ag Equine Programs

"The UK Equine Showcase is a great opportunity for those in the industry to learn about the latest equine research and education efforts at the University of Kentucky. The annual Kentucky Breeders' Short Course will focus on equine reproductive efficiency and horse management issues," said Ed Squires, MS, PhD, Hon. Dipl. ACT, executive director of the Gluck Equine Research Foundation and event co-chair. "UK is fortunate to have many experts in equine science who can serve as speakers."

Topics for the UK Equine Showcase include:

- Equine Cushing's disease in the aged horse
- Is your horse fat? There's an app for that!
- The Kentucky Horse Racing Necropsy Program: for the health and welfare of horses, humans, and the racing industry
- The economic impact of Kentucky's equine industry
- Stem cells for equine tissue regeneration
- Age-related susceptibility of foals to *Rhodococcus equi*
- Genetics, health, and performance
- Why did my performance horse test positive for prohibited substances?

Topics for the Kentucky Breeders' Short Course include:

- Reproductive anatomy and physiology of the mare

- Starting and stopping a mare's cycle
- Methods for evaluating stallion sperm
- Methods to predict foaling
- Diagnosing cryptorchids and ovarian tumors
- Problems in newborn foals
- Managing your stallion for a natural mating or artificial insemination program
- Diagnosing placentitis (placental problems)
- Problem mare panel

Both programs are open to veterinarians, owners, and managers of all horse breeds or anyone with an interest in learning more about equine reproduction and topics concerning horse management. Continuing education credit for veterinarians and veterinary technicians is pending approval by the Kentucky Board of Veterinary Examiners.

For the first time, UK is also accepting sponsor participation in the event. Display opportunities are available to participating organizations. Please email equine@uky.edu for details.

To register for the event, visit <http://2014ukequineshowcase.eventbrite.com>. Early bird registration rates last until Jan. 15. UK Equine Showcase early bird rates are \$50 per person, or \$40 each when two or more people from the same organization register at the same time. Early registration rates for the Kentucky Breeders' Short Course are \$100 per person, or \$90 each when two or more people register at the same time. Attendees can attend both the showcase and the short course for \$125 per person, or \$115 each when two or

UPCOMING EVENTS

November 14, 6 p.m.

Kentucky Equine Networking Association (KENA) Meeting. Networking 6 p.m., dinner 6:30 p.m., Sheraton Hotel, Lexington, Ky., Kentucky Breeds and Disciplines Council, a panel discussion.

November 21, 1:30-5:00 p.m.

Veterinary Diagnostic Laboratory. Endocrine and Genetic Disorders Symposium, with Teri Lear, PhD, UK Gluck Equine Research Center; Dianne McFarlane, DVM, PhD, Oklahoma State University; and Donald Thompson, PhD, Louisiana State University. Register at <https://egdsymposium.eventbrite.com>.

more people from the same organization register.

Early registration for the separate wet lab is \$200 and increases to \$225 after the Jan. 15 deadline. Participation in the wet lab also requires attendance to either the showcase or short course on the previous two days. Wet lab space is extremely limited and will fill quickly. College students are eligible for a reduced rate to the showcase and short course, but student-designated space is limited and on a first-requested, first-served basis. Students or UK faculty interested in attending either or both days should email jenny.evans@uky.edu. More about this event and other information about UK Ag Equine Programs can be found at www.ca.uky.edu/equine. 

>Holly Wiemers, MA, is communications director for UK Ag Equine Programs.

West Nile Virus and EEE Cases in Kentucky

As of Oct. 22, 2013, the Kentucky State Veterinarian's Office has documented 11 equine West Nile virus (WNV) encephalitis cases in the state this year, all in unvaccinated horses. These include multiple breeds; to date nine are alive and two were euthanized.

Also, two Eastern equine encephalitis (EEE) cases have been confirmed in Kentucky horses. Both were unvaccinated, and both died.

The cases were confirmed at the Murray State University Breathitt Veterinary Center and the University of Kentucky Veterinary Diagnostic Laboratory.

Horse owners are urged to contact their veterinarians now to get their horses vaccinated properly to reduce the risk of these and other diseases.

The American Association of Equine Practitioners lists EEE, Western equine encephalitis, WNV, tetanus, and rabies as core vaccinations recommended for all U.S. horses. See aaep.org/vaccination_guidelines.htm for a list of those guidelines.

More information can be obtained at the Kentucky State Veterinarian's website at kyagr.com/statevet/equine-infectious-diseases.html. 

>Roberta Dwyer, DVM, MS, Dipl. ACVPM, a professor in the Department of Veterinary Science at the University of Kentucky, provided this information.



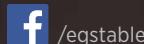
PHOTOS.COM
WNV and EEE are mosquito-borne diseases.



Equine influenza virus (EIV) and equine herpesvirus (rhinopneumonitis) cause the most common respiratory diseases in horses — and without a second vaccination, the risk increases.^{1,2} Don't take the gamble. Help protect your at-risk horse by vaccinating with FLUVAC INNOVATOR® EHV 4/1 every six months. Download the Equine Influenza Calculator on iTunes® or learn more at FluvacInnovator.com/calculator.

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¹ Fretz PB, Babiuk LA, McLaughlin B. Equine Respiratory Disease on the Western Canadian Racetracks. Can Vet J 1979;20(2):58-61.

² Manley L, Caceres P. Retrospective Cohort Study of an Equine Influenza Outbreak in the Chilean Army in the Metropolitan Region of Santiago, Chile, during 2006, in Proceedings. 12th Symposium of the International Society for Veterinary Epidemiology and Economics, Durban, South Africa 2009:64.