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Tips for Preparing Your Older Horse for Winter

COURTESY DR. AMANDA ADAMS

Dr. Amanda Adams owns two Quarter Horse oldies: Houdini, 22, on the left, and Doc, 24, on the right.

Fall is here, which means it's time to prepare your aging equine (15 years or older) for the winter ahead. Horses, like people, are typically faced with more challenges handling the cold weather as they age. Thus, preparing them ahead of time and providing proper care throughout winter is important.

With the cold weather almost upon us, we must take into account several important considerations for preparing and maintaining older horses during the cold season. Some of the most important points to consider include body condition and nutrition, vaccination status, parasite control, dental and hoof care, housing, exercise, and health monitoring.

Body Condition and Nutrition

Start by assessing your horse's body condition score (BCS). Is he too thin, too fat, or just right? You must make the call now and feed appropriately to prepare for the winter months ahead. If you don't feel comfortable making this call, involve your veterinarian or nutritionist in body scoring your horse. Be sure to get your hands on him or her as well, because a growing winter coat can hide a lot. Horses at a BCS of 5 or greater will have some extra fat stores that can provide insulation during the winter months; but your horse should not be overweight for the breed, as insulin resistance (IR) could become a problem. If you are worried about IR, have your veterinarian perform an oral sugar test to determine if your horse is IR or simply check basal insulin levels for an indication of hyperinsulinemia.

If your horse has a BCS below 5, increase his calorie intake slowly to improve his BCS score going into winter. If you are worried about putting weight on your horse because of IR, or perhaps because your horse has PPID (pituitary pars intermedia dysfunction, also known as equine Cushing's disease) and you think he might be IR, it is best to not guess but instead have your veterinarian check your horse's insulin levels so you know it's safe to add calories to his diet.

Articles of Interest

In developing a feeding strategy for the horse that needs to put on weight, first consider increasing your horse's hay intake to meet his energy needs. Hay is digested in the gastrointestinal tract by fermentation, which produces heat that the horse can use to maintain core body temperature. But there is a limit as to how much hay a horse can consume daily. In most cases horses will consume between 2-2.5% of their body weight (BW) a day; however, during times of harsher weather conditions, they might require upwards of 3%. For example, if your horse weighs 1,000 pounds and is eating 2% BW per day, he should be consuming 20 pounds of hay a day. Be sure to accurately weigh your hay and grain using

Preparing Older Horses for Winter

a scale because estimating can lead to under- or overfeeding.

Allowing hay consumption throughout the day is important to provide the continuous calories your horse needs to keep up with the energy demands of staying warm when temperatures drop. It is important to feed a good-quality hay that's free of mold, dust, and discoloration. Consult your county extension agent about hay sampling and testing. An analysis will give you an estimate of energy content and help you determine how to supplement effectively.

If your horse can't consume enough hay due to poor dentition, adding a grain concentrate and/or a fat source such as oil to the diet is important to provide enough calories.

Consider feeds designed for older horses, as most provide additional fiber and fat that are important energy and health considerations for older horses. In fact, University of Kentucky (UK) researchers recently conducted a study in collaboration with Purina to determine if a new formulation of Equine Senior might reduce inflammation and improve older horses' immune responses to vaccination. The results were positive. The new Purina Equine Senior product will become available Nov. 7. Regardless the feed brand, this study is an important example of how quality nutrition can improve aged horses' health.

It is also important to provide a salt/mineral lick throughout the winter and be sure these are always available and not covered by ice or snow. In addition, adequate water intake ensures adequate feed intake. If possible, keep your horse's water source warm to prevent freezing. Researchers have noted that water warmed to 39°F (4°C) resulted in greater water intake. If your horse does not drink well during the winter months, feeding water-soaked feeds (1-2 gallons of water per feeding) will help increase fluid intake. It is critical to monitor older horses' water intake. If your horse drinks less, he or she might eat less and, more importantly, be at an increased risk of impaction colic.

Overall, remember that you might need to increase your senior horses' daily feed to meet his body's increased demands during harsh winter weather conditions. It is critical to assess BCS regularly to ensure you've provided enough feed to maintain weight throughout winter. Consult your veterinarian, equine nutritionist, or geriatric horse specialist with specific questions.

ANNE M. EBERHARDT

Keep your senior horse on a regular hoof care schedule during winter, and consider pulling his shoes or adding traction devices or snow pads.

Vaccination Status

Cold temperatures can stress older horses and potentially set them up for illness. At UK we have shown that older horses have reduced immune responses to vaccination and are at risk for increased susceptibility to respiratory illness, in particular influenza (EIV). Moreover, we have recently shown that older horses with PPID are likely to have an even further reduced immune response to vaccination. Thus, it's important to make sure you maintain your old horses on a regular vaccination program.

At the minimum, make sure they are up-to-date on core vaccines recommended by the American Association of Equine Practitioners (AAEP). If you have a higher risk senior (an older show, trail, or 4H horse), consider having your veterinarian administer a booster for risk-based vaccines, including EIV, equine herpesvirus-1, and potentially West Nile virus, every six months, especially if your horses are showing or co-mingling with other showing horses during the stressful winter months. Consult your veterinarian with specific questions.

Parasite Control

Parasite control is an important part of caring for and managing horses. We have recently conducted an experiment to evaluate whether aged horses demonstrate statistically higher fecal egg counts (FEC) compared to middle-aged adult horses and to investigate whether they respond differently to the dewormer moxidectin compared to horses treated with pyrantel pamoate. This study's results indicated that old horses have significantly higher FEC than middle-aged adults. FECs declined significantly following anthelmintic treatment in both age groups. In summary, older horses are likely to harbor more parasites; however, it is important to perform FECs to determine if your older horses fall into this category. In our hands, both dewormers were effective at reducing FECs, but test your dewormer's efficacy, and use ones that work on your farm.

It might be beneficial to deworm your horse after the first frost and perhaps two to three times per year. Again, let the FECs tell you what is appropriate for your farm. It is also wise to involve your veterinarian in your deworming program.

Dental and Hoof Care

Have your veterinarian examine your older horses' teeth at least twice a year. One of these exams should happen in early fall. Normal dental care will help your horse chew and consume hay adequately, which will allow him to utilize the energy sources needed to stay warm and maintain body weight. This is especially important for older horses that tend to drop grain or quid (store a bolus of food in the side of the mouth, or drop food after a few bites). Proper dentition will also help prevent problems such as choke and colic.

Keep your horse on a schedule when it comes to hoof care. In winter you might consider pulling the shoes or changing shoes to prevent slipping on ice or adding borium and/or snow pads to protect the sole from bruising due to ice or frozen ground. It all depends on winter's effects on your terrain. Most importantly, clean your horses' feet daily to remove ice accumulation, or "snowballs."

Shelter and Blanketing

Providing shelters or windbreaks such as a barn, three-sided shed, rolled bales of hay, or plywood on fence rows is critical for older horses. Keep these areas dry, clean, and well-ventilated. Providing shelter will help older horses tolerate more severe weather temperatures and might help reduce their energy requirements.

Preparing Older Horses for Winter

Consider blanketing the senior horse when temperatures or wind chill drop below 5°F if there is no shelter available; a chance the horse will become wet (not usually a problem with snow, but much more of a problem with rain, ice, and/or freezing rain); the horse is bodyclipped; the horse has not been acclimated to the cold (i.e., recently relocated from a southern climate); or the horse has a BCS of 3 or less.

If you do blanket your horse, make sure it fits properly. If the horse is blanketed continuously, you should remove the blanket daily to check that no sores or skin conditions develop and to inspect the blanket for damage. Keep blankets dry, and do not blanket a wet horse; wait untils he is completely dry before blanketing. Keep in mind a horse will continue to develop a natural winter coat until late December, while days become shorter. Thus, blanketing before Dec. 22 will decrease a horse's natural winter coat.

Exercise

Low grade, non-intensive exercise is important for the aging horse. In fact, in human medicine researchers have shown this type of exercise to be anti-inflammatory for seniors, which might impact or improve age-related conditions such as arthritis. During the winter months it is important to prepare your horse for exercise with ample warm-up and cooldown periods. Cool the horse out completely with the help of coolers. Warm the bit before bridling him. Use common sense when judging riding conditions, as older horses do not adjust well to stressful conditions.

Health Monitoring

Because older horses' immune systems change naturally with increasing age, it is important to monitor them more closely for health conditions you might not have considered previously, including respiratory illness, skin conditions, colic, and arthritis. We have shown that as horses age, a phenomenon called inflamm-aging (low-grade, chronic inflammation) occurs. We have recently shown that season impacts the levels of inflammation and that levels are quite high during winter. Currently, we have ongoing research to determine safe, effective levels of natural anti-inflammatory treatments that might help reduce this inflamm-aging, thereby improving age-related conditions such as arthritis. It is important to consult with your veterinarian and start a therapy plan so you can optimize your horse's mobility during winter.

Summary

In preparing for winter, make sure your horse is up-to-date on vaccinations and deworming and is maintaining a proper BCS. During winter you should provide your horses with warmed water, additional hay and/or concentrate during extreme cold, shelter access, regular hoof and dental care, and regular body condition assessments. Also evaluate your shelters and their ventilation frequently. Horses, given the opportunity to acclimate to cold temperatures, often prefer and are better off outdoors with access to shelters. UK

>Amanda A. Adams, PhD, assistant professor and equine immunologist specializing in geriatric horse medicine in the Gluck Equine Research Center, provided this information. She can be reached at Amanda.adams@uky.edu.

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The Horse: Your Guide to Equine Health Care

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Myths About Hay Selection

Horse owners are often described as "picky, fussy, or difficult" when it comes to hay selection. This is not surprising considering many horses are either very valuable or viewed as part of the family.

However, a lack of knowledge regarding quality hay selection is what gives horse owners a bad rap and forces us to pay more for hay than other livestock owners do. Myths often

MATT BARTON PHOTOS

Hay Selection Myths

develop from a tiny bit of truth that gets inflated over time. To improve our collective knowledge about hay selection, we've debunked the following common myths about hay:

(Note: For the purposes of this article, "high-quality hay" refers to hay with a high nutritive value.)

Myth: Second-cutting hay is always the best.

How it started: Stage of maturity at harvest is the No. 1 factor determining hay quality. Cool-season grasses such as orchardgrass and timothy will produce a seedhead in the spring, often just in time for the first cutting. For the hay producer, this means an increase in yield and, therefore, more bales to harvest and sell. However, this also means that the crop's fiber is elevated, reducing quality. Because seedheads only form once a year in cool-season grasses, subsequent cuttings do not contain seedheads and second or later cuttings will result in less fibrous hay.

Color is an inconsistent factor to evaluate hay quality.

Truth: First cutting hay can be high-quality if cut early. Stage of maturity and other management factors affect hay quality at harvest. High-quality (or low-quality) hay can be harvested from late spring to late fall if weather and management conditions are right. Assess quality based on laboratory-performed analysis and not on cutting.

Myth: Horses require higher-quality hay than cattle.

How it started: In general, horses do require higher-quality hay than cattle because their digestive tracts are very different. Cattle are ruminants (have four-compartment stomachs that allow them to ferment and rechew forage) and are able to break down fiber very efficiently, whereas horses are monogastrics (one-compartment stomach) and are less efficient at fiber digestion. Therefore, cattle can perform well on hay that horses can't.

Truth: The animal's individual needs should dictate the hay quality provided. An easy-keeping Quarter Horse in light work does not need the same quality of hay as a Thoroughbred at the peak of his or her racing career. Similarly, an open (nonpregnant) Angus cow does not need the same quality of hay that a high-producing dairy Holstein needs at the peak of lactation. Consider your horse's current body condition, work level, and pasture availability before choosing hay to best meet your horse's needs. Base this choice on a hay test.

Myth: _____ is the best type of hay.

How it started: Statements such as this often come from horse owners who have moved from one area of the country (or world) to another and are not accustomed to the local hay. Forage species used for hay will fall into one of two categories: grasses or legumes. Grasses include orchardgrass, tall fescue, Bermudagrass, timothy, teff, and smooth bromegrass. Legumes include alfalfa and red clover.

Truth: Hay quality is not about the forage species or even the variety. When managed and harvested correctly, legumes will be higher in quality than grasses; however, there will be little difference between different grasses or legumes when all other factors are held constant. Buying quality hay produced locally will likely save money because of the reduced transportation costs. Research any concerns you might have about a specific grass or legume species, such as endophyte-infected tall fescue. If you are concerned about feeding a certain hay species, consult your local county extension agent or an equine nutritionist.

Myth: Round bales or silage contain diseases such as botulism and should not be fed to horses.

GRAD STUDENT SPOTLIGHT

ASHLEY FOWLER

From: **Napa, California**

Degrees: **BS, animal science, University of California, Davis**

MS, animal science, University of Kentucky

Ashley Fowler chose to pursue her master's at UK and study under Laurie Lawrence, PhD, professor in the Department of Animal and Food Sciences, because she said she felt UK is one of the best places in the world to study equine nutrition.

Fowler's main research focus involves investigating what affects horses' phosphorus excretion.

She said phosphorus has gained increased attention in the agricultural community because of its environmental impacts. Rock phosphate is a nonrenewable, limited resource that is commonly added to animal feeds due to its high availability to the animal.

"We are trying to better understand how horses absorb and utilize phosphorus so that we can more precisely determine their requirements and better formulate diets," Fowler said. "It is predicted that we will run out of this resource within the next 200 years."

In addition, phosphorus in fields can run off into waterways, killing fish and causing algae blooms. Understanding phosphorus' availability to horses could potentially minimize excess phosphate supplementation as well as reduce excretion into the environment, she said.

"Currently, I am working on developing an *in vitro* (in the lab) method to estimate phosphorus availability from a variety of feedstuffs," Fowler said. "I am also interested in how phosphorus content changes in pasture grass throughout the growing season and if these changes could affect phosphorus availability to grazing animals."

Fowler plans to keep her job options open after graduation. She would like to pursue a career in the equine industry, academia, or potentially private equine nutrition consulting. UK

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

Hay Selection Myths

How it started: The botulism bacterium prefers moist conditions and is commonly found in soil, stream sediments, and in the intestinal tracts of fish and mammals. Silage by definition is stored with higher moisture than hay and when not properly handled can allow the botulism bacterium to flourish. Round bales are often baled at a similar moisture content as small square bales, but are more likely to be stored outside where they can get wet from rain, therefore encouraging bacteria growth.

Truth: Proper storage, handling, and feeding of round bales and silage will minimize botulism risk. Cover round bales when stored, and feed them using a hay feeder to reduce contamination from trampling and urination. Do not feed round bales that show clear signs of mold to horses. Feeding silage to horses is much more common in other countries than in the United States. Silage should be put up at the proper moisture content for the style of storage, kept airtight until feeding, and fed quickly to reduce the risk of botulism. Always test silage for forage quality before feeding. In botulism-prone areas, routine vaccination will often include a botulism immunization to protect horses.

Proper storage and handling of round bales will minimize botulism risks.

Myth: Don't feed hay that has been rained on.

How it started: Rain affects hay in a variety of ways. First, rain on recently cut hay can prolong plant respiration and reduce energy content. Second, rain on legumes will cause leaves to separate from the stems (called leaf shatter) and, therefore, remove the plant's more nutritious portion. Fibrous stems will then be more concentrated in the final product, causing a decrease in quality. Third, rain causes leaching of sugar and other carbohydrates, proteins, and minerals.

Truth: Rained-on hay can be acceptable quality. While rain usually affects hay negatively, to what degree depends on several factors, including what type of hay is being harvested, how much/how intense the rainfall, stage of curing when it rained, and what the producer has done to counteract these negative effects. For example, if rain falls within a day of cutting, it has very little effect on hay quality. Test all hay, especially material that has been rained on, for quality, and inspect it for mold or dust before use.

Myth: Hay should be stored for six weeks before feeding.

How it started: This myth likely came about from hay testing. After hay is stored in a barn, it will continue to cure for four to eight weeks. This means hay quality can change slightly over this time before it becomes stable.

Truth: Hay can be fed at any time after harvesting. But to improve a hay test's accuracy, do not test the hay until it has been stored for six to eight weeks. While feeding hay sooner will not harm your horses, it will be difficult to balance the ration because you don't know the quality.

WEED OF THE MONTH

Common name: **Curly dock**
Scientific name: ***Rumex crispus*** **L.**
Life Cycle: **Perennial**
Origin: **Eurasia**
Poisonous: **Yes, but rarely**

Curly dock is a stout, deep-rooted simple perennial that generally grows 2 to 4 feet—depending on the site—and is found throughout the United States. This weed grows well in alfalfa, disturbed sites, cultivated fields, ditches, and especially in compacted, overgrazed pastures.

Curly dock reproduces from seeds and shoots that form on the root crown. It spreads by lightweight seeds that wind and water can carry for long distances. Curly dock overwinters as a rosette.

One of curly dock's identifying characteristics is the papery sheath at each node on the stem. Leaves are mostly basal and narrow, and the leaf margin is curly or wavy. Flowers are greenish and inconspicuous. Fruits are brown and triangular achenes.

Mowing is usually ineffective for controlling curly dock because of the plant's deep taproot. Control with herbicides can be challenging and usually requires multiple treatments. Consult your local Cooperative Extension Service personnel for a list of herbicidal controls in your area. UK

>William W. Witt, PhD, a professor emeritus in plant and soil sciences at the University of Kentucky, provided this information.

Myth: Green is good and brown is bad.

How it started: Hay that has been harvested too late or mishandled will often lose its green color due to processes such as heating and bleaching. Green hay is less likely to have gone through these processes and more likely to be of quality.

Truth: A hay test is the only way to truly evaluate quality. No quality factors directly affect color or vice versa. Therefore, color is an inconsistent factor to evaluate hay quality.

Myth: Feeding hay causes a large, distended digestive tract, known as a hay belly.

How it started: Hay belly usually results when horses consume large quantities of low-quality, high-fiber hay. The horse might be thin over the neck, withers, ribs, and hindquarters. (The appearance of hay belly can also be caused in horses with high parasite burdens.)

Truth: A balanced ration that includes quality pasture or hay will maintain a horse at an ideal condition without excessive gut fill.

Forage, whether in the form of pasture or hay, is an important component in the equine diet. Choosing hay for your horse will depend on his current condition, work level, pasture availability, and management logistics on your farm. Always inspect hay and make sure it's free from contaminants such as weeds, insects, mold, dust, and other foreign material. And always test

Hay Selection Myths

hay before feeding it to ensure the total ration is balanced and can meet your horse's needs.

For hay testing information, contact your local county extension agent. Kentucky residents can also contact the Kentucky Department of Agriculture Forage Testing Program at 502/782-9210 or visit kyagr.com/marketing/forage-program.html.

For other useful information, see the following publications from UK at uky.edu/ag/forage/horselinks:

- Botulism: A Deadly Disease that can Affect Your Horse
- Choosing Hay for Horses
- Minimizing Losses in Hay Storage and Feeding
- Understanding Forage Quality

>Krista Lea, MS, assistant coordinator of UK's Horse Pasture Evaluation Program; Ray Smith, PhD, professor and forage extension specialist; and Tom Keene, hay marketing specialist, all within the University of Kentucky Department of Plant and Soil Sciences, provided this information.

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Jenny Evans (left), interim executive director of the UK Gluck Equine Research Foundation, and Dr. David Horohov, interim director of the UK Gluck Equine Research Center and interim chair of the UK Department of Veterinary Science, presented a plaque to Dr. Ernie Bailey, professor at the UK Gluck Equine Research Center, during the ceremony.

Dr. Michelle LeBlanc, a posthumous inductee formerly of Rood & Riddle Equine Hospital, was honored and recognized for her contributions to equine science during the ceremony.

UK Equine Research Hall of Fame

The University of Kentucky Gluck Equine Research Foundation inducted three scientists into the UK Equine Research Hall of Fame Oct. 9 at the UK Hilary J. Boone Center.

Ernie Bailey, PhD, professor at the UK Gluck Equine Research Center; Elwyn Firth, BVSc, MS, PhD, Dipl. ACVS, a professor at the University of Auckland in New Zealand; and Michelle LeBlanc, DVM, Dipl. ACT, a posthumous inductee formerly of Rood & Riddle Equine Hospital, were inducted during the ceremony for their contributions to equine science and research. Nominated by their peers and colleagues, Bailey, Firth, and LeBlanc were selected by past Hall of Fame inductees and joined the 26 past distinguished inductees.

Established in 1990, the Equine Research Hall of Fame is housed at the UK Gluck Equine Research Center. UK

>Jenny Evans, MFA, is the interim executive director of the UK Gluck Equine Research Foundation.

Jenny Evans (left), interim executive director of the UK Gluck Equine Research Foundation, and Dr. David Horohov, interim director of the UK Gluck Equine Research Center and interim chair of the UK Department of Veterinary Science, presented a plaque to Dr. Elwyn Firth, professor at the University of Auckland in New Zealand, during the ceremony.

Professional pianist Denine LeBlanc, sister of posthumous award inductee Dr. Michelle LeBlanc, played a piano recital in honor and memory of her sister during the induction ceremony.

Genomics' Contribution to Equine Viral Arteritis Research and Beyond

In the past two decades the field of equine genomics has exploded, leading to the discovery of genetic variants for coat colors, gene associations with athletic ability, and gene mutations responsible for a variety of health conditions and diseases.

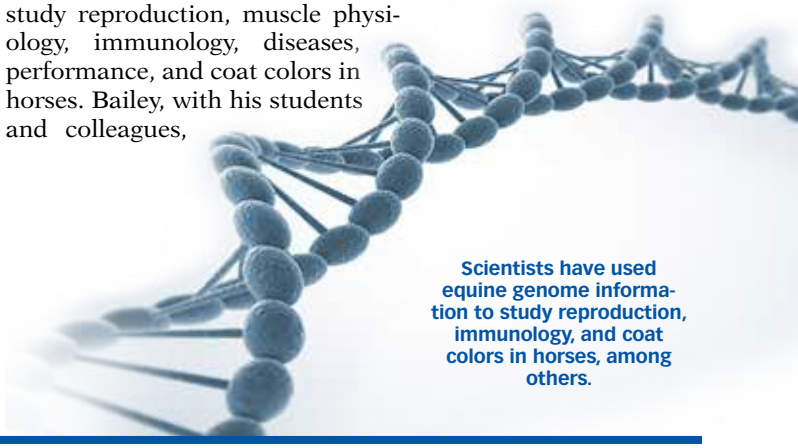
Starting in 1995, Ernie Bailey, PhD, an equine geneticist and professor at the University of Kentucky's (UK) Gluck Equine Research Center, coordinated an international effort to create a gene map for horses; this ultimately led to sequencing the horse genome in 2006. The effort involved more than 200 scientists from 30 institutions and created valuable research tools to address equine health problems that had not yielded to earlier technologies.

At the 13th Mary Passenger Memorial Lecture on Equine Medicine and Surgery, held Oct. 10, Bailey—one of this year's Equine Research Hall of Fame inductees—spoke about advances in equine genomics and their contribution to EVA studies. He began with a brief history of genome sequencing.

A key event occurred in 2003 when geneticists completed the human genome. They discovered that humans have 20,000 genes and that only 2% of DNA encodes the proteins. This led to the question, "What is the role of the other 98% of our DNA"?

Because the genome's size and organization are consistent across all mammals, scientists began sequencing certain animals to answer that question and better understand the human genome. One of those mammals was the horse.

Scientists have since used equine genome information to study reproduction, muscle physiology, immunology, diseases, performance, and coat colors in horses. Bailey, with his students and colleagues,



Scientists have used equine genome information to study reproduction, immunology, and coat colors in horses, among others.

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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*EHV-1 and EHV-4

[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.

Genomics

published studies on genes controlling the immune response, coat color, swayback in Saddlebreds, and dwarfism in Miniature Horses. Recently, Bailey said the team at UK has made genetic discoveries related to equine arteritis virus (EAV) infections in horses.

Equine viral arteritis (EVA) is a contagious infectious disease that can cause respiratory disease, abortion in mares, and a persistent carrier state in stallions. Affected stallions become natural sources of EAV and continue to shed the virus in their semen.

In 2011 Yun Young Go, DVM, MSc, PhD, a former graduate student in the laboratory of Udeni Balasuriya, BVSc, PhD, professor of virology at the UK Gluck Center, found that EAV infected CD3+T lymphocytes (a subpopulation of white blood cells) in some horses but not others. She, Balasuriya, Bailey, and colleagues evaluated 16 stallions that were susceptible to EVA infectivity and 21 that were resistant and discovered that many differences between these two groups occurred on chromosome 11 (ECA11). In other words, somewhere on ECA11 are the genes responsible for EVA severity and development of the carrier state.

Who Was Mary Passenger?

Mary Passenger, VMD, was one of the first female equine veterinarians. After graduating veterinary school from the University of Pennsylvania in 1971, she moved to Lexington and earned a position at Hagyard Equine Medical Institute—then known as Hagyard-Davidson and McGee Associates. Unfortunately, her time spent in the Bluegrass was short; she passed away from work-related injuries in 1974 at age 28. But the impact she left on others was great.

In the years that followed, memorial contributions in Passenger's name flowed in to the University of Kentucky, and in 1986 enough funds had been collected to establish the annual Mary Passenger Memorial Lecture on Equine Medicine and Surgery, co-sponsored by Hagyard and UK's Department of Veterinary Science.

Today the lecture is an opportunity for Equine Research Hall of Fame inductees to speak about their work and achievements.

"In the future we can identify and use susceptible horses when we are investigating methods to control EAV infections."

Dr. Ernie Bailey

They subsequently discovered a strong association between stallions that were shedders and those that had the susceptibility gene. The next step was to sequence this gene in species related to the horse (i.e., rhinos, tapir, zebras, donkeys, etc.) to determined the origin of sequences for resistance and susceptibility. They found that:

- Donkeys and zebras had the same allele (form of the gene) as susceptible horses;
- EAV susceptibility might be ancestral among *Equidae*; and
- EAV resistance might be newly evolved in the horse.

This work identified new targets for therapeutic treatment of EVA. "In the future we can identify and use susceptible horses when we are investigating methods to control EAV infections," Bailey concluded. UK

>Alexandra Beckstett is the managing editor of The Horse: Your Guide to Equine Health Care.

UK Gluck Equine Research Center Interim Leadership Positions Announced

The University of Kentucky's College of Agriculture, Food and Environment has named David Horohov, PhD, as interim chair of the Department of Veterinary Science—a position which also serves as director for the Maxwell H. Gluck Equine Research Center—and Jenny Evans, MFA, as interim executive director of the Gluck Equine Research Foundation.

Horohov, professor and Jes E. and Clementine M. Schlaikjer Endowed Chair at the Gluck Center, specializes in equine immunology research. He joined the Gluck Center in 2003. Previously, he was a professor of veterinary immunology within the Department of Pathobiological Sciences at Louisiana State University's School of Veterinary Medicine.

Horohov earned his bachelor's in entomology from Penn State University, his master's in insect pathology from Purdue University, and his doctorate in immunology from the University of Tennessee, Knoxville. He completed a post-doctorate in cytokine biology with the Food and Drug Administration.

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Dr. David Horohov

Jenny Evans

Evans has served in a communications and event planning role with the Gluck Foundation and Gluck Center since 2009. Prior to her time at UK, Evans was a reporter with *The Kentucky Standard, Thoroughbred Times*, and *The Springfield Sun*. She earned her bachelor's in public relations from Eastern Kentucky University and her master's in writing from Spalding University.

According to College of Agriculture, Food and Environment Dean Nancy Cox, MS, PhD, Gluck faculty will be leading the effort to establish a permanent chair and haven't yet set a timetable. Industry stakeholders will serve an important advisory role during that process.

At the Oct. 7 Gluck Foundation Board meeting, a committee of board members and Gluck Center faculty was formed to determine the future vision for the foundation's executive director position. That process is expected to begin soon. UK

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

COMMENTARY

Don't Ignore Exotic Diseases

"Knowing that forewarned is forearmed."
Abraham Tucker 1768 in *The Light of Nature Pursued*

In early September, the first 2014 equine case of West Nile virus (WNV) encephalitis was confirmed in Kentucky. The 5-year-old horse was euthanized after advanced neurologic symptoms developed. She had no history of being vaccinated for WNV.

The cost of euthanasia and disposal was much more than any WNV vaccine.

And yet the same story happens year after year, not only in Kentucky, but around the country with a disease for which there are safe, efficacious vaccines.

West Nile virus was first discovered in 1937 in Africa, but prior to 1999 few Americans had any reason to know about it since it was a foreign animal disease. No one worried about it. After all, it was an ocean away and someone else's problem … until the first cases were diagnosed in New York.

When it became obvious that the mosquito-transmitted disease was spreading across the United States causing disease and deaths in horses, researchers utilized available information to start the wheels turning toward disease prevention. By 2001 a licensed WNV vaccine was available for U.S. horses, with other equine vaccines being produced subsequently. To date, no human WNV vaccine is licensed in the United States, despite annual human cases since 1999. In 2013, 2,469 human cases of WNV were reported in the United States, according to the U.S. Centers for Disease Control and Prevention.

Diseases such as pythiosis and leishmaniasis might be new to readers as well; however, equine cases of both diseases have been diagnosed in the United States. Just because a disease is rare in a state or country doesn't mean horse owners shouldn't be aware and vigilant, just like WNV taught us. The world is a small place, considering the rapid national and global transportation of horses for competition, breeding, and sales. Horse owners recognizing clinical signs and calling a veterinarian is the backbone of all disease surveillance. Research is the basis for improving disease diagnosis, treatment, and prevention.

Prior to spring 2014, North Americans likely only knew about ebola virus from reading Richard Preston's book *The Hot Zone*, popular in the 1990s. This disease takes on new meaning when the nightly news shows affected people in Western Africa suffering and dying from this outbreak.

And, while horses are not affected with ebola virus, who would have thought that a tobacco plant would be involved in the production of a serum that might be able to treat this deadly disease? Before this outbreak, such research would likely have been considered a waste of money, but now we can all hope that further research into treatment and prevention can rapidly progress to stop this tragedy.

It is tempting to ignore information and research into uncommon or so-called exotic diseases that have no immediate impact on our own horses without taking into account the indisputable fact that someone else's problem today can become our problem tomorrow. UK

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This is an excerpt from *Equine Disease Quarterly*, funded by underwriters at Lloyd's, London, brokers, and their Kentucky agents

Now You Can Follow Us on Twitter, Too

The University of Kentucky College of Agriculture, Food and Environment has several equine-related social media pages with the latest news and events information.

The UK Ag Equine Programs recently joined Twitter. Follow us at UKAgEquine.

The UK Maxwell H. Gluck Equine Research Center is also on Twitter at UKGluckCenter.

Got Facebook? Like these pages administered by us:

University of Kentucky Ag Equine Programs: UK Ag Equine Programs is an overarching framework for all things equine at the University of Kentucky, including the undergraduate degree program, equine-related student organizations, equine research, and outreach activities.

University of Kentucky Maxwell H. Gluck Equine Research Center: The mission of the Gluck Center is scientific discovery, education and dissemination of knowledge for the benefit of the health and well-being of horses.

University of Kentucky Horse Pasture Evaluation Program: The University of Kentucky Horse Pasture Evaluation Program is a service program offered to horse farms in Kentucky with the goal of overall improved pasture management. Regardless of breed or discipline, the programs goals are to: provide detailed pasture management recommendation to horse farm owners and managers; help improve pastureland to increase quality and quantity of pasture as a feed source and reduce the need for stored feeds such as hay and grain; and assess the potential risk of fescue toxicity of individual pastures to pregnant broodmares.

Kentucky Equine Networking Association (created by the Kentucky Horse Council and University of Kentucky): The mission of the Kentucky Equine Networking Association (KENA) is to provide an educational and social venue for equine professionals and other horse enthusiasts from all disciplines to share ideas and business strategies, and obtain current knowledge on horse and farm management with the principal objective of enhancing individual horse ownership and the horse industry at large.

Saddle Up SAFELY: Saddle Up SAFELY is a rider safety awareness program sponsored by UK HealthCare, UK College of Agriculture, Food and Environment and many community organizations. It aims to make a great sport safer though education about safe riding and horse handling practices. UK

UK Ag Equine Programs to Host Equine Showcase, Breeders' Short Course

University of Kentucky Ag Equine Programs will host the UK Equine Showcase and the 6th Annual Kentucky Breeders' Short Course Jan. 23-24, 2015, at the DoubleTree Suites by Hilton, located at 2601 Richmond Rd. in Lexington.

The UK Equine Showcase, now in its fourth year, will highlight the university's current equine programs and relevant industry findings. It will run from 1-5:30 p.m. Jan. 23, with a light reception following.

The 6th Annual Kentucky Breeders' Short Course is an in-depth program on equine reproduction and horse management issues that will run from 8 a.m. to 5 p.m. Jan. 24, with lunch provided.

"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."

"The UK Equine Showcase is a great opportunity for those in the industry to learn about the latest equine research and education efforts at UK," said Ed Squires, MS, PhD, Hon. Dipl. ACT, within UK's Gluck Equine Research Center and event co-chair. "The annual Kentucky Breeders' Short Course will focus on equine reproductive efficiency and horse management issues."

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 horse management. Continuing education credit for veterinarians and veterinary technicians is pending approval by the Kentucky Board of Veterinary Examiners.

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 https://2015ukshowcaseshortcourse.eventbrite.com. Early bird registration rates last until Jan. 5. 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 more people from the same organization register. Registration will close Jan. 16. 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 ca.uky.edu/equine. UK

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

Topics for the UK Equine Showcase include:

- Update on the illicit use of cobalt in racehorses
- Moxidectin poisoning
- Parasites and growth rates in foals
- The ergot alkaloid enigma: understanding stability of ergovaline in tall fescue
- The molecular composition of *Sarcocystis neurona* and its application for controlling equine protozoal myeloencephalitis
- An update on equine proliferative enteropathy and *Lawsonia intracellularis*
- Physiology effects of aging – Focus on the horse: Let's talk about inflammation, vaccination, and deworming
- Amino acid requirements in horses: in search of new knowledge
- Emerging equine diseases

Topics for the Kentucky Breeders' Short Course include:

- Old and new approaches for lighting mares
- Deworming strategies for broodmares and foals
- Plasma for foals: Is it all the same?
- Angular limb deformities in foals
- Omega-3 fatty acids in mares and stallions
- The Genetic Tool Box: Beyond answering the question, "Who's your (horse's) daddy?"
- What goes wrong in the geriatric mare?
- Vaccination strategies for EVA and managing the EVA carrier stallion
- Improving the survival of stallion sperm
- Placentitis update

"The UK Equine Showcase is a great opportunity for those in the industry to learn about the latest equine research and education efforts at UK. The annual Kentucky Breeders' Short Course will focus on equine reproductive efficiency and horse management issues"

Dr. Ed Squires

UK Gluck Center to Host EAV Symposium in November

The University of Kentucky Gluck Equine Research Center will host a one-day symposium titled "Controlling EAV and Other Infectious Agents in Stallions, Semen, and Embryos" on Saturday, Nov. 22, from 8 a.m.-5:45 p.m. at the Embassy Suites in Lexington.

The safe international movement of stallions and trade in semen and embryos is essential to the equine industry's economic well-being. Venereal disease outbreaks can have disastrous impacts on the horse industry. This symposium focuses on strategies for controlling equine arteritis virus (EAV) and other infectious agents in stallions, semen, and embryos.

International experts will discuss topics such as the importance of the carrier stallion and methods to eliminate EAV from the stallion; consequences of an equine viral arteritis (EVA) outbreak from a national and international perspective; safety and efficacy of vaccines against EVA; and the veterinarian's role in adapting a code of practice for minimizing the spread of venereal diseases. The symposium is targeted toward veterinarians, regulatory officials, farm managers, and breed registry representatives.

The symposium is partially funded by a USDA-NIFA-AFRI grant titled "Identification of genetic factors responsible for establishment of equine arteritis virus carrier state in stallions." However, registration is required, and the event costs $25. To register, visit https://eavsymposium.eventbrite.com.

Seven hours of Continuing Education is pending approval by the Kentucky Board of Veterinary Examiners for veterinarians and veterinary technicians. CE sheets must be signed at the meeting to receive credit. UK

For more information, contact Jenny Evans at jenny.evans@uky.edu or 859/218-1089.

>Jenny Evans, MFA, is the interim executive director of the Gluck Equine Research Foundation.

SYMPOSIUM SCHEDULE

8-8:30 a.m.	REGISTRATION
8:30-8:45	Introduction—*Dr. Udeni Balasuriya, UK Gluck Equine Research Center*
8:45-9:30	Importance of the carrier stallion in the epidemiology of EVA and molecular diagnostics—*Dr. Udeni Balasuriya, UK Gluck Equine Research Center*
9:30-10:15	Equine health-related and economic consequences of outbreaks of EVA—*Dr. Peter Morresey, Rood & Riddle Equine Hospital*
10:15-10:30	BREAK
10:30-11:30	EVA International Perspective: ■ Epidemiology in Europe—*Dr. Richard Newton, Animal Health Trust (United Kingdom)* ■ International Trade—*Dr. Falko Steinbach, Animal Health and Veterinary Laboratories Agency (United Kingdom)*
11:30-noon	Serological diagnosis of EVA by cELISA—*Dr. Chungwon Chung, VMRD*
Noon-1 p.m.	LUNCH
1-1:45	Perspectives on EAV vaccination—*TBD, Zoetis, and Dr. Maria Barrandeguy, INTA (Argentina)*
1:45-2:15	Clearance of the carrier state in EAV-infected stallions—*Dr. Ed Squires, UK Gluck Equine Research Center*
2:15-3	Current vaccination recommendations against EVA: Considerations of safety and efficacy/National and international control and disease certification programs for EVA—*Dr. Peter Timoney, UK Gluck Equine Research Center*
3-3:15	BREAK
3:15-4	Controlling bacteria and viruses in equine semen and embryos—*Dr. Reed Holyoak, Oklahoma State University*
4-4:45	Code of practice for managing stallions from the risk of venereal diseases: ■ USA perspective—*Dr. Dickson Varner, Texas A&M University* ■ European perspective—*Dr. Tom Stout, Utrecht University (The Netherlands)*
4:45-5:30	Panel discussion lead by Dr. Falko Steinbach, AHVLA (United Kingdom), and Dr. Maria Barrandeguy, INTA (Argentina)
5:30-5:45	CLOSING REMARKS

UPCOMING EVENTS

November 20, 4 p.m.

Department of Veterinary Science Equine Diagnostic Research Seminar Series, University of Kentucky Veterinary Diagnostic Laboratory. Topic: Shock Wave Therapy; Speaker: Dr. Scott McClure

November 20

Kentucky Equine Networking Association (KENA) meeting, Networking 6 p.m.; dinner 6:30 p.m. Location TBA. kentuckyhorse.org/kena.

November 22, 8:30 a.m.-5:45 p.m.

Controlling EAV and Other Infectious Agents in Stallions, Semen and Embryos, Embassy Suites, Lexington. Tickets: http://eavsymposium.eventbrite.com.