



BROUGHT TO YOU BY **zoetis**

Cold Weather Horse Management Tips



ANNE M. EBERHARDT

Young growing horses will likely require a concentrate in addition to ample hay to meet their increased caloric needs.

As the calendar flips from December to January, the coldest months of the year in Kentucky are typically just settling in. To help owners weather the winter, an equine expert from the University of Kentucky (UK) College of Agriculture, Food and Environment shares some tips for managing horses during extremely cold weather.

While the ideal time for cold weather preparation is in the fall, there are some steps you can take now to help keep your horses healthy. Bob Coleman, PhD, PAS, extension equine specialist in UK's Department of Animal and Food Sciences, said horse owners should prepare for both acute and chronic cold; acute cold occurs during the cold snaps that last for short periods, while chronic cold takes hold and stays in a region for much longer. In some cases acute situations can be more dangerous than chronic cold, he said, because animals aren't as used to the cold and owners might be less prepared to combat the temperatures.

Regardless of the type of cold, owners

should ensure horses have adequate shelter, water, dry bedding, and feed, he said.

Coleman said digestion is one way horses generate heat when it is cold. The average horse, with a lower activity level, should eat between 1.5 and 2 percent of his body weight in feed per day to maintain weight.

Feed requirements increase as temperatures drop and horses use more calories to keep warm. Mature horses, when adapted, can handle a temperature of 5 degrees F—called the lower critical temperature, he said—before needing to increase heat production or reduce heat loss to maintain core body

temperature. One way to do this is for the horse to eat more. In temperatures around minus 5 degrees F horses will require 15 percent more forage to provide the needed calories, meaning they'll need to eat 2 to 3 additional pounds of hay each day.

"As a horse owner, making sure there is some extra hay available will help your horses get through the short-term cold snaps," Coleman said. "Long or more chronic exposure to cold will need some other management changes to meet the horse's calorie needs. For the short-term, add more forage."

But, he said, if forage supplies are limited, more hay alone isn't doing the trick, or you have a horse with special dietary needs, you might need to add a concentrate feed to the diet.

While mature horses at maintenance, can often get their required nutrients from good-quality legume-grass mixed hay, young growing horses and broodmares in late gestation generally require a concentrate to meet their increased calorie needs. Senior horses, especially those with poor dentition, might also require a concentrate. Make all dietary changes and add concentrates gradually to prevent digestive upset.

Coleman said it's also critically important for horses to have access to clean, unfrozen water during the winter. While this can be one of the most difficult and time-consuming aspects of winter horse management, it is also one of the most important. Appropriate water

In This Issue

2018 Equine Vet CE and UK Equine Showcase	3
Managing Small Horse Pastures	4
Erol Receives National Excellence Award	6

COLD WEATHER HORSE CARE TIPS

intake helps reduce impaction colic risk and keep the horse's body functioning properly.

Horses also need shelter to provide protection from wind and precipitation.

If you choose to blanket horses, Coleman said to make sure those blankets are both wind- and waterproof. A wet blanket equals a wet horse, and a wet hair coat has reduced insulating abilities. A cold and wet horse can quickly develop cold stress.

Take extra time to observe horses during cold snaps to ensure they're handling the weather well, and provide extra care to those that are feeling the cold's effects.

One last bit of advice: Coleman strongly recommends keeping horses out of pastures or paddocks with ponds or other open water sources. Every winter there are cases of horses falling through ice and into a pond, often perishing before they can be rescued. **UK**

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

Masthead

■ University of Kentucky Ag Equine Programs

Holly Wiemers, MA, APR, managing editor and communications director of UK Ag Equine Programs, holly.wiemers@uky.edu

■ Bluegrass Equine Digest Advisory Board

Bob Coleman, PhD, PAS, associate professor and extension horse specialist

David Horohov, MS, PhD, chair of UK's Department of Veterinary Science and director of the UK Gluck Equine Research Center

Michael "Mick" Peterson, PhD, director of UK Ag Equine Programs and professor in the department of biosystems and agricultural engineering

Ray Smith, PhD, professor and forage extension specialist in the department of plant and soil sciences

Jill Stowe, PhD, associate professor in the department of agricultural economics

■ Bluegrass Equine Digest Editorial Committee

Craig Carter, DVM, PhD, Dipl. ACVPM, director and professor of the UK Veterinary Diagnostic Laboratory

Laurie Lawrence, PhD, professor in the department of animal and food sciences

Krista Lea, MS, coordinator of UK's Horse Pasture Evaluation Program in the department of plant and soil sciences

Martin Nielsen, DVM, PhD, Dipl. EVPC, ACVM, associate professor at the UK Gluck Equine Research Center

■ The Horse: Your Guide To Equine Health Care

Erica Larson, News Editor

Brian Turner, Layout and Design

The *Bluegrass Equine Digest* is a registered trademark of the University of Kentucky Ag Equine Programs and Gluck Equine Research Center. The *Bluegrass Equine Digest* is produced by the University of Kentucky in partnership with TheHorse.com and sponsor Zoetis. It is published monthly to provide up-to-date information on equine research from the University of Kentucky's College of Agriculture, Food and Environment. Research material is meant to be shared. However, materials are copyrighted and require reprint permission from UK Ag Equine Programs. Past issues of the *Bluegrass Equine Digest* are available at www2.ca.uky.edu/equine/bed.

Horseman Fred Sarver Named 2018 Friend of UK Ag Equine Programs

If there were a list of characteristics defining an ideal equine industry supporter for a university program, American Saddlebred horseman Fred Sarver would check all the boxes.

A fierce advocate, farm owner offering employment opportunities to undergraduates and alums, selfless giver of time and talents, and industry stakeholder willing to consistently provide constructive feedback, Sarver exemplifies the characteristics needed to support a program.

In recognition, Sarver was named the 2018 Friend of UK Ag Equine Programs at its Dec. 6 program reception and internship showcase.

"When I think of defining servant leadership to the equine programs at the University of Kentucky, the image of Fred Sarver comes immediately to mind," said Stuart Brown, DVM, veterinarian with Hagyard Equine Medical Institute, in Lexington, Kentucky, and past recipient of Friend of UK Ag Equine Programs award.

Brown co-nominated Sarver for the award.

Sarver has been a professional in the American Saddlebred breeding industry for more than 35 years. He owns Cornerstone Farm, in Carlisle, Kentucky, and is the proprietor of Sarver Equine LLC, in Paris, Kentucky. Sarver established Cornerstone Farm in 2008, fulfilling his and his wife Karen's lifelong dream to provide the very best in reproductive services and horse care.

"I greatly appreciate receiving the Friend of UK Ag Equine Programs award," Sarver said. "It is important to give time and resources to insure a promising future for the next generation of horsemen. UK offers an excellent vehicle for future horsemen to receive an outstanding education and, through its internship requirement, have a firsthand experience in the horse industry. I have had the benefit of hosting several UK students as interns, and I have found the energy and enthusiasm of youth is contagious and keeps us sharp."

Nancy Cox, PhD, dean of the UK College of Agriculture, Food and Environment, said,



Dr. Nancy Cox and Dr. Mick Peterson (right) present the 2018 Friend of UK Ag Equine Programs award to Fred Sarver.

COURTESY UNIVERSITY OF KENTUCKY

2018 FRIEND OF UK AG EQUINE PROGRAMS

“Fred cares more about the quality of education that our students are picking up, both inside and outside the classroom, than anyone I can think of.”

Sarver has also facilitated funding for several genetics projects at the UK Gluck Equine Research Center.

“As a leader in the American Saddlebred industry, he welcomes scientific discovery and has recently facilitated funding for studies involving padded shoes on horse movement,” Cox said.

In addition to serving on UK’s Equine Industry Advisory Committee, Sarver is a director on the USA Equestrian Trust Board and on the board of directors for the Kentucky Equine Education Project. He has served as president of both the American Saddlebred Horse Association and American Saddlebred Registry. He was also a founding board member of the Kentucky Saddlebred Owners and Breeders Association and American Saddlebred Grand National prize program. Sarver is a past member of the Kentucky State Fair Board, where he served as the director in charge of the World’s Championship Horse Show, the top Saddlebred show in the world.

“Fred Sarver has supported both educational and research missions of the equine programs, and his Cornerstone Farms is one of our most important links to the equine industry,” said UK Ag Equine Program director Mick Peterson, PhD.

Camie Heleski, PhD, a senior lecturer in the equine science and management undergraduate degree program, also supported Sarver’s nomination. In her letter of support, she wrote, “If you look at his record of service to the horse industry, here is someone who ‘puts his money and time where his mouth is.’ Many people have good ideas, but only a few are prepared to give up

valuable time toward putting those ideas into play. Fred is an important advocate for us out in the broader horse industry. I know I am not alone in being so incredibly grateful that Fred Sarver is a friend of UK Ag Equine Programs.”

The Friend of UK Ag Equine Programs was created in 2005 to recognize a member of the public who has provided advocacy, funding, or other extraordinary support or a college or university employee who has generated an exceptional relationship with stakeholders that manifested into a new program, new advocacy success, or new resources for the program.

Past Friends of UK Ag Equine Programs include:

- **Tom Riddle, DVM**, a Lexington, Kentucky-based veterinarian and co-founder of Rood & Riddle Equine Hospital;
- **Matt Koch**, of Shawhan Place Farm;
- **Bennie and Cheryllee Sargent**, of Sargent Quarter Horses and coach of the UK Equestrian Team, Western division;
- **Stuart Brown, DVM**, a Lexington-based veterinarian with Hagyard Equine Medical Institute;
- **Norm Luba**, executive director of the North American Equine Ranching Information Council;
- **Dan Rosenberg** of Rosenberg Thoroughbred Consulting;
- The Northern Kentucky county extension agent trio **Don Sorrell** of Campbell County, **Dan Allen** of Kenton County, and **Jerry Brown** of Boone County; and
- **David Switzer**, former executive director of Kentucky Thoroughbred Association/Kentucky Owners and Breeders Association.

For more information about UK Ag Equine Programs, visit www.ca.uky.edu/equine. **UK**

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

UK to Host Revamped Equine Showcase, Equine Vet CE Session

On Jan. 25-26, 2019, UK Ag Equine Programs will host its 8th Annual UK Equine Showcase in conjunction with an Equine Vet Continuing Education session (formerly known as the Kentucky Breeders’ Short Course).

This year organizers reformatted the doubleheader event to better provide equine research information to UK’s different stakeholders.

The weekend will kick off Jan. 25 with a revamped Kentucky Breeders’ Short Course, now called UK Equine Vet CE. The Equine Vet CE will take place Friday, Jan. 25 from 12:30-5 p.m. EST at the UK Veterinary Diagnostic Laboratory, 1490 Bull Lea Road, Lexington. This event will offer four hours of RACE-approved veterinary continuing education courtesy



of Kentucky Association of Equine Practitioners (KAEP) funding support. Expert speakers will present on:

- Parasite control in the breeding season;
- Novel fescue, toxic fescue, and how UK staff can help;
- The insidious cost of fescue in foaling and breeding mares;

- Periparturient broodmare death; and
- The peripartum period for mares and foals.

Then, on Jan. 26, the annual UK Equine Showcase will take place at the Fayette County Extension office at 1140 Harry Sykes Way in Lexington. The showcase will highlight UK’s equine programs and

EQUINE VET CE AND EQUINE SHOWCASE

relevant industry findings with an emphasis on pest management. It will run from 8:30 a.m. to 2:30 p.m.

Lecture topics will include:

- What you need to know about insects and horses;
- Important equine diseases carried by insects;
- Vector-borne disease affecting humans and horses;
- Making your barn horse-friendly and insect-averse;
- Managing mud and manure; and
- Horses and the Ag Water Quality Act.

“As a land-grant institution, the University of Kentucky has, from its founding, been tasked with engagement with the citizens of the commonwealth and support of Kentucky agriculture,” said UK Ag Equine Programs director Mick Peterson, PhD. “The equine industry plays a unique role in the Kentucky economy,

and we are proud to join with our partners within the industry by presenting current research.”

The Friday Equine Vet CE is primarily open to veterinarians, but farm managers and horse owners can also attend as space permits. The event is free to veterinarians thanks to a KAEP grant. To register, visit eventbrite.com/e/2019-university-of-kentucky-veterinary-continuing-education-tickets-53607653936. For more information, contact Emma Adam, DVM, PhD, at emma.adam@uky.edu.

“We have a strong lineup for quality vet CE this January,” said Adam, equine research and outreach veterinarian with UK’s Department of Veterinary Science. “Get to know our speakers, catch up with colleagues, and get ready for the breeding season.”

The UK Equine Showcase is open to veterinarians, owners, and managers of all horse breeds or anyone with an interest in learning more about managing

horses. The cost to attend is \$40 until the early bird registration deadline of Jan. 18. After that date, the cost will be \$50. Register at eventbrite.com/e/8th-annual-uk-equine-showcase-tickets-52836552551. E-mail equine@uky.edu with questions.

Additionally, UK is accepting sponsor participation for the Saturday Showcase, and display opportunities are available to participating organizations. E-mail AHarper147@uky.edu for details.

College students are eligible for a reduced rate to the Showcase, but student space is limited and will be provided on a first-requested, first-served basis. Students or UK faculty interested in attending either or both days should e-mail equine@uky.edu.

For more information about these events and other UK Ag Equine Programs, visit www.ca.uky.edu/equine. **UK**

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

Managing Small Horse Pastures

While many of us are in the depths of winter, it’s important to begin planning for our horses’ forage needs once the pastures begin to get green. Many horse owners try to keep their horses on pasture, but it can be a challenge to maintain healthy pastures that provide high-quality forage. Horses tend to overuse certain parts of pastures, literally eating favorite areas into the ground and opening the way for encroachment by opportunistic weeds. Owners must understand that in addition to managing the horses, they should also maintain the forage.

“Even if you only have 2 to 5 acres, the grass is a crop, and certain practices must be followed in order to enhance that crop,” says Bob Coleman, MS, PhD, associate professor in UK’s Department of Animal and Food Sciences and extension horse specialist.

How to Start

Coleman recommends working with your county extension agent to test your soils and interpret those tests to determine what type of fertilizer program would be best for your pasture. Also look at the kinds of plants growing on that land and consider what can be grown in your region, if you decide to renovate and reseed. Weed control is also important, since weeds can take over a pasture very quickly.

Bob Mowrey, MS, PhD, professor emeritus and extension horse commodity coordinator at North Carolina State University, in Raleigh, says it then boils down to pasture size and number of horses. “Everything on your place has pasture potential, at least for part of the year,” says Mowrey.

Some forage species can withstand overgrazing better than



While many of us are in the depths of winter, it’s important to begin planning for our horses’ forage needs once the pastures begin to get green.

others. “Fescues and Bermuda grass can withstand close, heavy grazing, whereas a cool-season grass like orchard grass cannot. Growth reserves are crucial, to maintain perennial forage stands,” says Mowrey.

Coleman worked on a project that involved grazing two horses on 2.5 acres. “We started with a nice renovated pasture, doing everything to maximize the grass crop before we put the horses in,” he says. “We got rid of all broadleaf weeds, no-tilled in some additional grass, and fertilized at the appropriate time for our area (right after Thanksgiving). The horses weren’t put in until the next May, so it had time to recover and become a nice pasture.” He cross-fenced it with electric tapes to rotate the paddocks.

In the years since the experiment, “the pasture is doing okay, but there’s been some weed encroachment,” he says. “Horses overgraze certain areas in spite of rotational rest periods, and if a

MANAGING SMALL HORSE PASTURES

person isn't careful, weeds get a foothold in the slightly overgrazed areas."

Horses prefer some grasses over others, and there are also certain areas of a pasture where they prefer to be because of breeze, shade, social factors (such as wanting to be closer to neighbors' horses), etc. Anyplace the horses graze repeatedly the grass competition is reduced, and weeds take advantage.

"One way to preserve pasture potential and get maximum nutrient intake from it is to have a drylot or sacrifice area where horses are confined part of the time," says Mowrey. This gives grass a chance to recover from stress—whether it's from drought, excessive rain (when horses might churn the sod into mud), overgrazing, or a need for normal regrowth time. A rest period is always necessary to provide more forage and nutrients down the road. If horses overgraze, the plants won't regrow later.

Management Options

The easiest (but least effective) pasture management option is continuous grazing. The horses are turned out on the whole area whenever they are not confined to a stall, eating their favorite areas into the ground and leaving other plants to become tall and coarse. "You lose a portion of the pasture, and soon the roughs (where they don't like to graze) get bigger and the lawns (where they like to graze) get smaller," says Mowrey.

Another option is rotational grazing, which involves dividing the pasture into paddocks and rotating the horses through these, giving each segment time to regrow. In the South it takes 21 or more days to get regrowth in the pasture segment.

One more option is controlled intensive grazing. The idea behind this is to use a small piece very intensively, allowing the horses to eat everything in it during a short time so there are no plants that become tall, then moving the pastured animals on before any plants are seriously overgrazed. Called flash grazing or mob grazing, this works well with a large number of animals in a small paddock for one day, moving them daily to a new piece of ground. It also works with one or several horses in a very small area.

"This forces the animals to graze everything, then you move the electric fence and give them another small area," says Mowrey. It's best to move them often, such as every three or four days, but this isn't feasible for most horse owners who work away from home. It's easier to do it on weekends. Using slightly larger paddocks and moving the horses every seven days can still control spot grazing and make sure all forage is consumed before moving them to a new area. When the grass grows back after this flash grazing period, it comes back very quickly.

With this method in a region that gets abundant rainfall, you might find you don't need 2 acres per horse in the summer. "With ideal conditions you can get by on less than 1 acre per horse," says Mowrey. "But to do this you need to make a commitment to using the (electric) tape fencing and moving the horses every few days. You also have to be flexible in case you have less-than-ideal growing conditions. On the other hand you may have abundant

rain, cool temperatures, and phenomenal grass growth. In that instance you may have more forage than needed and may need to cut hay on part of the pasture."

Rotational Grazing

For traditional rotational grazing, a good rule of thumb is to take the horses off an area when the grass across the whole paddock is about 3 to 4 inches tall, on average. If they graze it much below that, the grass plants lose vigor.

"You may have some areas down to 2 inches and some that are 5 to 6 inches, but it's still time to move the horses," says Coleman. Due to their selective grazing, they won't graze the whole parcel down to exactly 4 inches.

He recommends taking horses off when grass is 4 inches tall and putting them back when it regrows to 8 inches. "If you leave 4 inches, recovery will be faster and you won't have to wait as long to go back into that piece," he notes. "Everyone asks what the rotation time should be, but it varies. I've tried two weeks on and four weeks off, in a three-paddock rotation for two horses on 2.5 acres. If there's appropriate rain, this works well. But I've also had to move them faster ... seven days on and 14 days off."

If grass isn't growing adequately, discontinue pasture rotation, and confine the horses where they can be fed hay.



The most common way to divide a pasture is with electric fence.

Fencing

The most common way to divide a pasture is with electric fence. "I define where the paddocks will be when I start in the spring, and I put the fences up at that time and don't have to worry about moving them during the summer," says Coleman. That way, if a person gets into a time crunch when it's time to move the horses, the paddocks are ready and you just open a gate and don't have to take time moving the fence.

If you decide to move the fences periodically to accommodate a swifter rotation system, there are some very safe fences that can be installed quickly, such as polytapes strung on fiberglass or small wood posts. If you have a good perimeter fence that incorporates an electric wire, you can string the temporary electric fences between them and put in another division anyplace, anytime. You can use polytape initially to subdivide the pastures, even if you plan to put in permanent divisions later. It always takes a season or two to determine the best locations for permanent dividers.

"What we've discovered is that many people don't have time or money to put in permanent fences, but the polytape is working, and they just leave it that way," says Mowrey. If at some point you end up with more forage than the horses can eat, temporary fences allow you to remove the dividers if you decide to cut hay.

Take-Home Message

There are ways to "stretch" your pasture to adequately feed more than one horse on minimal acreage. However, you must be willing to create a healthy pasture and maintain it properly. In the long run, you will have more grazing, and that is better for your horses and your pocketbook.

>Heather Smith Thomas is a freelancer for *The Horse*. She and her husband raise cattle and keep a few horses near Salmon, Idaho.

UK Veterinarian Receives National Excellence Award

At the recent American Association of Veterinary Laboratory Diagnosticians convention, UK's Erdal Erol, DVM, MSc, PhD, received the 2018 BIOMIC Excellence in Diagnostic Veterinary Microbiology Award.

This national award recognizes distinguished scientists for research accomplishments in the field that can be applied for the betterment of veterinary medicine.

Erol has led the UK Veterinary Diagnostic Laboratory's (UKVDL) diagnostic microbiology unit since 2010. He has served as principal investigator or co-investigator on several research projects that have added to researchers' understanding and knowledge base of bacterial infectious diseases in animals, some of which have been devastating to the livestock and horse industries. His seminal work to better understand the etiology of nocardiform placentitis in broodmares has helped better characterize the epidemiology and pathogenesis of this mysterious agent that results in late-term fetal loss, leading to ideas for better management and preventive modalities.

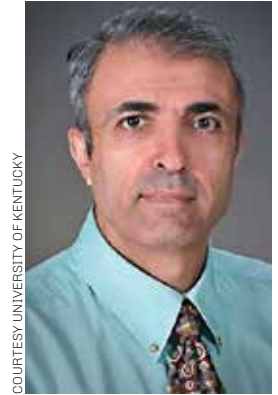
"I believe Dr. Erol ranks as one of the top veterinary microbiologists in the United States conducting and participating in research to advance diagnostic methods," said Craig Carter, DVM, PhD, Dipl. ACVPM, director of the UKVDL. "His contributions are lauded by scientists around the world, and his work truly has advanced the field of bacteriology in veterinary medicine."

Erol received his doctor of veterinary medicine degree from Firat University in Turkey, a microbiology master's degree from the University of Missouri, and a doctorate in microbiology from Texas A&M University. Before coming to UK, Erol was an assistant professor of molecular biology at Texas A&M and an infectious disease diagnostician at the Texas A&M Veterinary Medical Diagnostic Laboratory from 2003 to 2010.

In addition to his diagnostic casework at UK, Erol led an effort to fund, purchase, and implement MALDI-TOF (matrix-assisted laser desorption/ionization-time of flight) for bacteriology, revolutionizing the VDL's ability to identify pathogenic bacteria, reducing turnaround times for clients by a full day. This technique has been used in human medicine for many years and, now, veterinary labs across the country are using the technology to aid in bacteria identification.

The UKVDL is part of the UK College of Agriculture, Food and Environment and its staff diagnose animal diseases and performs tests which safeguard the health of Kentucky's animal population. The lab helps identify infectious diseases, identify regulatory diseases, provides the means to meet export sales requirements, and provides an early warning system for impending epidemics. It is a full-service laboratory with a heavy caseload, often involving 20 or more large animals for necropsy in a single day. **UK**

>Aimee Nielsen is an agricultural communications specialist with the UK College of Agriculture, Food and Environment.



COURTESY UNIVERSITY OF KENTUCKY

Erdal Erol, DVM, MSc, PhD

UNIVERSITY OF KENTUCKY Ag Equine Programs

Top-notch, interdisciplinary undergraduate and graduate education, world-class equine research and unmatched service to the equine industry since 2005 — all in one place.

It starts with us.

The horse is at the heart of everything we do.

equine.ca.uky.edu



UK College of Agriculture, Food and Environment

The College of Agriculture, Food and Environment is an equal opportunity organization.

The Asian Longhorned Tick: Challenges From an Invasive Arachnid

The Asian longhorned tick (*Haemaphysalis longicornis*) has a small, reddish-brown body with no distinctive markings to facilitate quick recognition. In addition, unfed adults are smaller (3 to 4 millimeters long) than the familiar commonly encountered hard ticks. The initial confirmed identification of Asian longhorned ticks in the United States was based on specimens collected from a heavily-infested sheep in New Jersey in 2017. This was thought to be the first detection of a new tick species in the U.S. in 50 years.

However, subsequent investigation revealed that specimens removed from a dog in New Jersey in 2013, which were initially identified as the native rabbit tick (*Haemaphysalis leporispalustris*), were actually Asian longhorned ticks. Consequently, the species has been present for several years and has spread. As of August 2018, this invasive tick has been found in at least one location in Arkansas, Connecticut, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Virginia, and West Virginia (Figure 1). Reported hosts have included cattle, a dog, a horse, an opossum, and white-tailed deer.

Native to China, Korea, and Japan, the Asian longhorned tick became established in Australia and New Zealand, where it feeds on a variety of wild and domestic animals and humans. This species does best in moist, warm environments. However, it can withstand temperatures from its developmental threshold of about 12 degrees C (about 53 degrees F) to a lethal high temperature of 40 degrees C (104 degrees F). Adults and particularly larvae appear to have a relatively low tolerance of dehydration, which could play an important role in its ultimate distribution in the U.S.

The Asian longhorned tick is a three-host tick with a life cycle that takes about a year. While males and females occur in approximately equal numbers in its native habitat, very few males have been found in the U.S. Apparently, parthenogenesis (female reproduction without the need of fertilization by a male) is a significant



Figure 1. Known U.S. distribution of *Haemaphysalis longicornis* (as of Aug. 30, 2018).



JAMES GATHANY/DDC

The female Asian longhorned tick (seen here) is able to reproduce without male fertilization to rapidly grow local populations after establishment. They are able to deposit about 2,000 eggs, all female.

feature of its biology in the United States. Females can deposit about 2,000 eggs, all females, so local populations can grow rapidly following establishment. This can result in significant blood loss and stress to infested hosts.

While the initial introduction(s) of

While males and females occur in equal numbers in its natural habitat, very few male Asian longhorned ticks have been found in the U.S.

this tick is unknown, genetic mapping has identified three mitochondrial DNA lineages. This points to at least three distinct female lineages. Parthenogenesis would allow relatively rapid selection for biotypes in response to environmental factors in its new habitat.

Collections of Asian longhorned ticks from sheep in China indicate the ears and periocular areas are preferred attachment sites. Specimens collected and tested in the U.S. have not been shown to carry any diseases, but the Asian longhorned tick is a competent disease vector in Asia, contributing to theileriosis and babesiosis in cattle in Australia and New Zealand and anaplasmosis in Korea. Severe fever with thrombocytopenia syndrome (SFTS) is an emerging hemorrhagic fever in East Asia caused by SFTS virus (SFTSV), a newly discovered phlebovirus. The *H. longicornis* tick has been suspected to be the vector of SFTSV.

Time will tell the story of its vector potential in North America. Preserved suspected Asian longhorned tick specimens should be sent to the National Veterinary Services Laboratories, in Ames, Iowa, for identification.

CONTACT: Lee Townsend, MS, PhD—ltownsen@uky.edu—859/257-7455—UK Department of Entomology **UK**

>This is an excerpt from *Equine Disease Quarterly*, funded by underwriters at Lloyd's, London.

YOUR HORSE COULD FACE
AN EVEN GREATER DANGER.

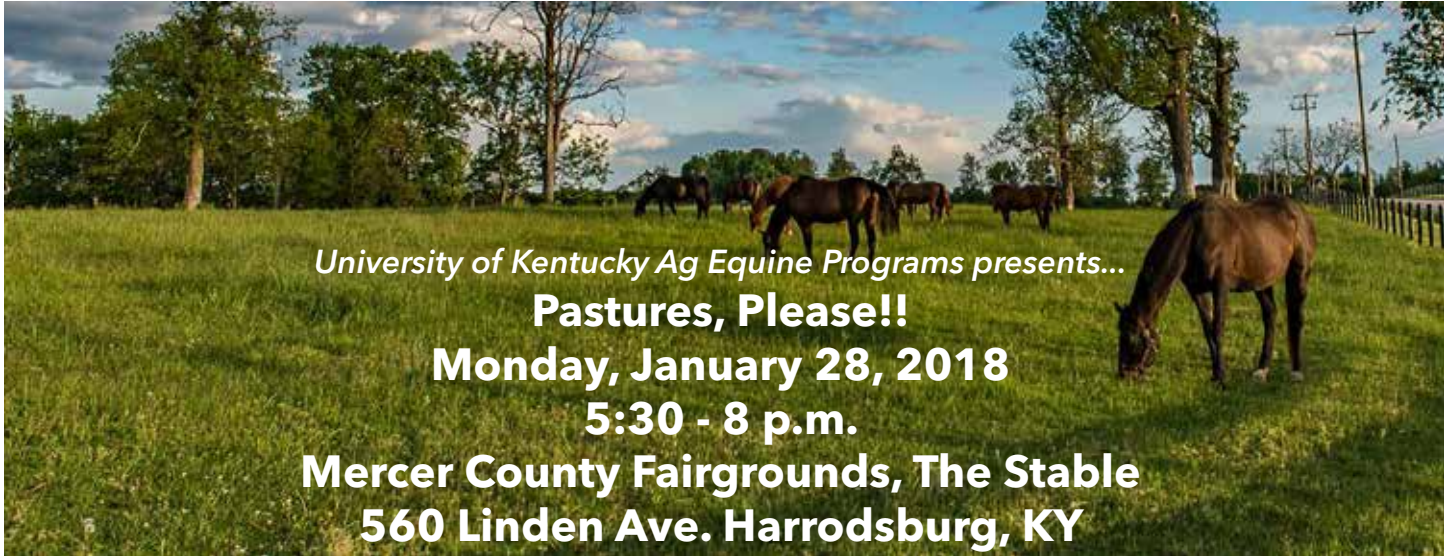


Core EQ
Innovator[™]

Don't leave your horse exposed. New CORE EQ INNOVATOR[™] is the first and only vaccine to help protect against all potentially fatal core equine diseases in one injection.

CoreEQInnovator.com

zoetis



Speakers

- Weedy Grasses in Grazed Pastures- A Management Challenge
Dr. JD Green
- How Novel: Safe tall fescue varieties for all classes of horses
Dr. Karen McDowell and Krista Lea
- Using Seed Coatings and Other Techniques to Improve Pasture Establishment
Dr. Ray Smith

**RSVP to to Mercer County Extension Office at
859-734-4378 or dl_CES_Mercer@email.uky.edu**



University of Kentucky
College of Agriculture,
Food and Environment
Cooperative Extension Service



THOROUGHBRED
Landscape Products

UK University of
Kentucky
Ag Equine Programs
College of Agriculture, Food and Environment



Commentary: Preparing for Future Arthropod-, Vector-Borne Diseases

Vector or arthropod-borne diseases represent some of the most significant threats to human and animal health in certain regions/countries of the world. Ever-increasing numbers have spread beyond historically defined boundaries, in no small part as a result of continued expansion in international trade of live animals or animal products and because of global climate change.

The worldwide spread of two human pathogens—Chikungunya and Zika viruses—from the African continent in recent years illustrates the major difficulties confronting the global community in containing these and other arthropod-borne diseases.

Within the realm of infectious diseases, it is more relevant in today's world to consider populations of humans and animals in different countries as co-existing in a global context, blurring the boundaries and reach of national political interests. We have, in essence, become an international community in which social media play a major role in communicating information across a spectrum of issues, including disease events.

Aside from what is known of the diversity and range of particular disease vectors in the United States, there is a need to be mindful of the possible introduction of a particular arthropod, e.g. tick or mosquito, that has never been recorded previously in the country—in other words, an invasive species.

The article on the discovery of the Asian longhorned tick (*Haemaphysalis longicornis*) for the first time in the U.S. highlights the challenges that can be presented by an invasive tick species. Although shown to be a competent vector of various diseases in a number of Pacific Rim countries, the potential competency of this particular tick to transmit animal or human diseases in the country remains to be established.



Better surveillance and monitoring of tick and insect populations is needed to establish the range and distribution of the various species with potential to serve as competent vectors of known mosquito- and tick-borne equine diseases.

In recent months there have also been reports of the introduction of invasive species of mosquito (*Ochlerotatus japonicus*) into Spain and of ticks (*Hyalomma marginatum* and *H. rufipes*) into Germany.

Although the discovery of *H. longicornis* was reported for the first time in 2018, subsequent investigations have shown that the tick had been in the U.S. at least since 2013. The lesson to be

learned from this experience is that much greater surveillance and monitoring of tick and insect populations in general is needed to establish the range and distribution of the various species with potential to serve as competent vectors of known mosquito and tick-borne diseases of equids.

To better prepare ourselves for dealing with future disease threats, resources need to be made available to support the infrastructure for more comprehensive vector and disease surveillance programs in conjunction with improved capacity to respond to major disease events. The risk of such threats will increase inevitably with continued growth in the globalization of trade and the influence of climate change on our environment and the spread of vectors and vector-borne diseases.

An integral element to better prepare ourselves for the next disease threat is the need for greater awareness and better education of practicing veterinarians who are frequently the "first responders" in dealing with a case/outbreak of a novel disease or a possible invasive ectoparasite. Increased public education and engagement is also important in addressing any disease threat that might evolve.

CONTACTS: Peter J. Timoney, MVB, MS, PhD, FRCVS (ptimoney@uky.edu)—859/218-1094 and Charles Issel, DVM, PhD (cissel@uky.edu)—UK Maxwell H. Gluck Equine Research Center UK

>This is an excerpt from *Equine Disease Quarterly*, funded by underwriters at Lloyd's, London.

Upcoming Events

Jan. 25, 2019 – 12-5 p.m.

UK Equine VetCE (formerly Kentucky Breeders' Short Course)

Location: UKVDL, Lexington, Kentucky
Four hours of CE credit available for veterinarians. The UK Equine Vet CE is primarily open to veterinarians, but if spots are available, farm managers and horse owners can also attend as space permits. The event is free to veterinarians thanks to a KAEP grant. Register at eventbrite.com/e/2019-university-of-kentucky-veterinary-continuing-education-tickets-53607653936.

Jan. 26, 2019 – 8:30 a.m.-2:30 p.m.

UK Equine Showcase

Location: Fayette County Extension Office, Lexington, Kentucky
The showcase is open to veterinarians, owners and managers of all horse breeds or anyone with an interest in learning more about horse management. The cost to attend is \$40 until the early bird registration deadline of Jan. 18, 2019. After that date, the cost will be \$50. Register at eventbrite.com/e/8th-annual-uk-equine-showcase-tickets-52836552551.

Jan. 28, 2019 – 5:30-8 p.m.

Pastures Please!!

Location: Mercer County Fairgrounds The Stable
560 Linden Ave., Harrodsburg, Kentucky

**Download
These *FREE*
Special Reports
Today**

Catastrophic Injuries

Equine Herpesvirus

Both Sponsored By Zoetis

Others available at

the **HORSE**.com
YOUR GUIDE TO EQUINE HEALTH CARE