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AND OUTREACH EFFORTS AT
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EQUINE SCIENCE REVIEW

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College of Agriculture,
Food and Environment

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Equine Science Review is a monthly College of Agriculture, Food and Environment newsletter that highlights important equine work happening at the University of Kentucky.



Photo courtesy Jimmy Henning, PhD, extension professor, Plant and Soil Sciences

COVID-19 AND ITS SIGNIFICANCE FOR THE HORSE

Commentary by Peter Timoney, MVB, PhD, FRCVS, Professor, Frederick Van Lennep Chair in Equine Veterinary Science at the Gluck Equine Research Center

Events worldwide over the past several months are a grim reminder of the potential ability of a novel infectious agent to cause widespread illness in naive human populations that can result in the death of an alarmingly high percentage of seriously affected individuals. Since initial discovery of SARS-CoV-2, the causal viral agent of the disease COVID-19, in December 2019, that exact scenario has played out in an ever-increasing number of countries around the world. The unique ability of this newly discovered virus to spread through direct or indirect respiratory contact between people within a matter of a few months, resulted in a global pandemic that the human race has never before been exposed to nor had to deal with. The impact that this on-going pandemic is having on the health and economic well-being of human societies worldwide is beyond comprehension at this time.

The disease in question that has been termed COVID-19, is caused by a previously unknown virus (SARS-CoV-2) that is a member of the coronavirus family. Viruses of this family are so named because of their crown-like structure and morphology when visualized by electron microscopy. This is not the first coronavirus to have emerged within the last 15 to 20 years that has turned out to be a major human pathogen. There have been three in all, each capable of causing serious and frequently life-threatening respiratory disease in humans. The first was SARS-CoV, the cause of severe acute

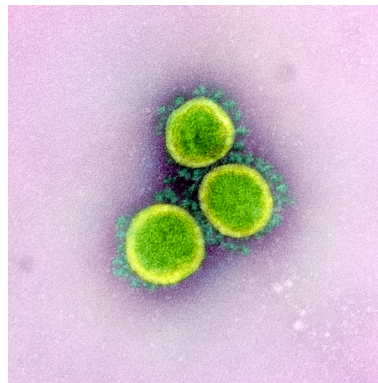
respiratory syndrome (SARS) first reported in PR China in 2002. The second was MERS-CoV, the cause of Middle East respiratory syndrome (MERS) that was first identified in Saudi Arabia in 2012. All three coronaviruses are highly important human pathogens, each contagious and capable of causing widespread disease and a variable mortality rate.

Coronaviruses are a group of diverse viruses that have been found in a wide range of

CORONAVIRUS INFECTION IN HORSES, FIRST IDENTIFIED IN THE EARLY 1970S, CAN BE ASSOCIATED WITH A RANGE OF CLINICAL SIGNS IN THE HORSE.

host species, both mammals and birds, besides humans. Members of the family can cause respiratory or intestinal disease in certain domestic species such as horses (equine coronavirus infection), swine (transmissible gastroenteritis), cattle (winter dysentery), cats (feline infectious peritonitis), and chickens (infectious bronchitis) to name some of the more important diseases.

Coronavirus infection in horses, first identified in the early 1970s, can be associated with a range of clinical signs in the horse. These can range from fever, depression, diarrhea and colic to fever, diminished appetite, depression without any enteric (in the intestines) or intestinal involvement to asymptomatic infections. Based



CORONAVIRUS PARTICLE. CREDIT NIAID-RML.

on field outbreaks of the disease, only about 20% of infected horses develop signs of clinical illness with soft feces and the occasional case of colic. Fewer than 5% of cases may exhibit signs of neurologic involvement that is believed to be attributable to hyperammonia (and excess of ammonia) in the enteric, or intestinal, tract.

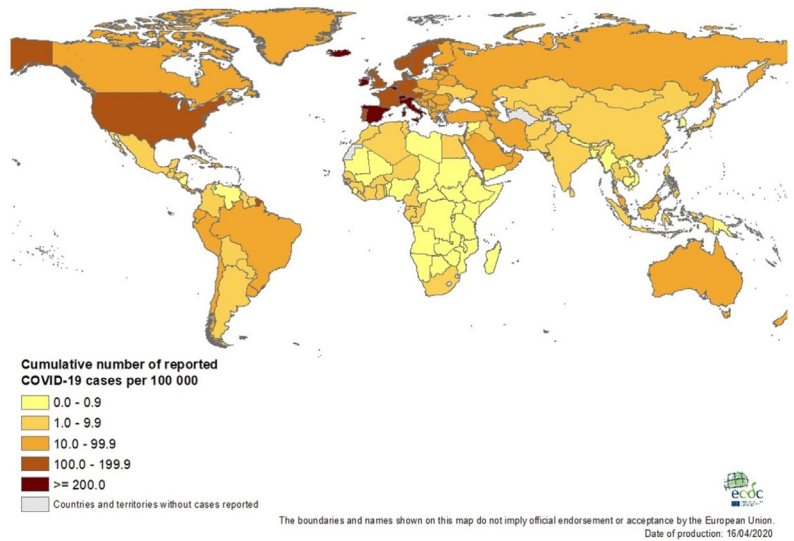
It is evident from the foregoing that coronavirus infection in the horse is an enteric and not a respiratory disease. This is similar to coronavirus-related diseases in swine and cattle. The coronavirus that affects chickens, although primarily a respiratory pathogen, can also infect the urogenital (involving the urinary and genital organs) and gastroenteric systems. Feline infectious peritonitis (inflammation of the serous membrane lining the cavity of the abdomen and covering the abdominal organs) in cats is an immune-mediated disease. The primary clinical syndrome caused by members of the Coronavirus family will vary depending on the virus in question and the host

species it infects.

It is important to emphasise that SARS-CoV-2 is a totally distinct coronavirus from equine coronavirus or the coronaviruses that cause disease in the other domestic animal species. Furthermore, there has never been any indication since its original discovery that equine coronavirus has caused infection in humans.

It is not surprising in light of its recent emergence, that there are many aspects of the biology of SARS-CoV-2, its epidemiology and the pathogenesis, or disease development, of COVID-19 that remain to be clarified, although this is rapidly changing. The outcome of comparative genomic analysis would indicate that this virus very likely originated in bats. It is known that bats are a major natural reservoir of highly diverse SARS-like CoVs. Previous studies established that bats were the original source of both SARS-CoV and MERS-CoV.

It should be noted that in the case of both SARS-CoV and MERS-CoV, interspecies transmission to humans did not take place directly from bats. An intermediate host was involved, which in the case of SARS-CoV was the Himalayan

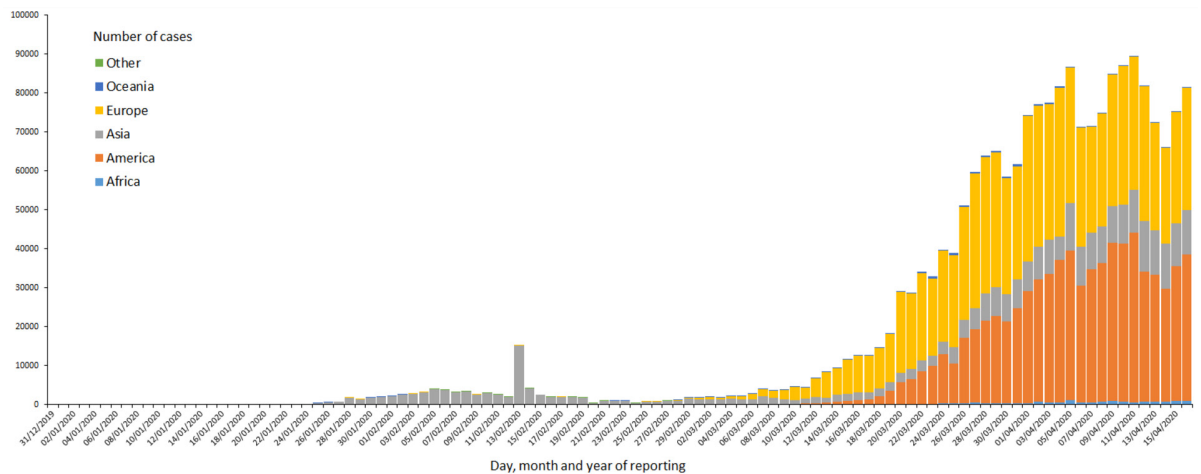


COVID-19 AFFECTED COUNTRIES AS OF APRIL 16, 2020. CREDIT EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL.

palm civet or the racoon dog, and in the case of MERS-CoV, the dromedary camel. Although not yet established in the case of SARS-CoV-2, it is probable that an intermediate host or hosts was also implicated in the interspecies transmission or “species jump” of this virus to humans. Among the species under investigation as possible intermediate hosts are the pangolin, Chinese krait and cobra snakes. Circumstantial evidence would indicate that “wet markets” in cities and towns in PR China

where a wide variety of wildlife are traded, are the sites where it is believed humans can be exposed to a particular species of animal that is infected with SARS-CoV-2. A second “species jump” of the virus would be needed for humans to be successfully infected and for human-to-human transmission to take place.

With reference to virus transmission, it should be pointed out that the principal means of dissemination of SARS-CoV-2 is very different to that of equine



EXPONENTIAL INCREASE IN NUMBERS OF CASES GLOBALLY. CREDIT EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL.

coronavirus. SARS-CoV-2 is spread primarily by the respiratory route through the dispersal of aerosolized infective secretions from acutely infected individuals; by contrast, equine coronavirus is transferred between horses by consumption of fecal contaminated material (oral-fecal route).

A point of major and continuing concern is whether given appropriate circumstances, SARS-CoV-2 is capable of infecting horses and other domestic and wildlife animal species. At this point in time, there are no reports of the virus infecting or causing disease in horses nor is there any reason to believe that horses have

AT THIS POINT IN TIME, THERE ARE NO REPORTS OF THE VIRUS INFECTING OR CAUSING DISEASE IN HORSES NOR IS THERE ANY REASON TO BELIEVE THAT HORSES HAVE A ROLE TO PLAY IN THE TRANSMISSION AND SPREAD OF THE VIRUS.

a role to play in the transmission and spread of the virus.

Isolated cases of SARS-CoV-2 infection have however been confirmed in other domestic species, specifically dogs and cats. Two dogs in Hong Kong and one cat in Belgium were diagnosed with the virus; in each instance, their respective owners were positive for COVID-19. While no clinical signs were reported in either dog, the cat developed vomiting, diarrhea and respiratory issues associated with the infection. In a recent report from the PR China, samples collected from clinically ill dogs (4) and cats (20) in Beijing, were all negative for SARS-CoV-2 genetic material.

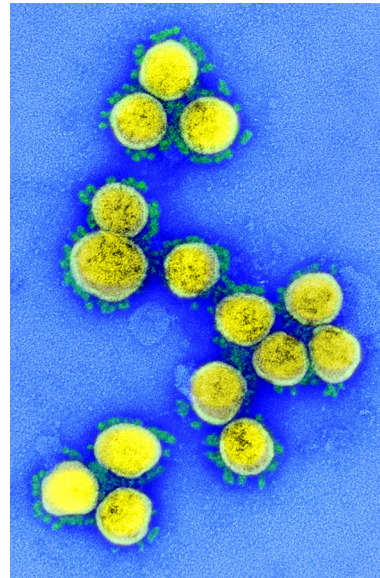
On the other hand, a study of 102 cats in the city of Wuhan, epicenter of COVID-19, provided

serological proof of exposure to the virus in 15% of the cats but no evidence of active infection with the virus.

Apart from confirmed reports of SARS-CoV-2 in dogs and cats, infection with the virus has also been recently reported in wildlife. A Malayan tiger that developed a dry cough and reduced appetite was confirmed positive in the Bronx Zoo in New York. Several cohorts to this case displaying similar clinical signs, although not tested, may also have been cases of infection. Additional information on the host range of SARS-CoV-2 is provided in a report of a study of tissues from 775 farmed mink, foxes and racoon dogs harvested in PR China between 2016 and 2019. All of the samples were negative for genetic material of the virus.

Aside from the reports of natural SARS-CoV-2 infection in dogs and cats and a tiger, an experimental in-depth study has been undertaken of the susceptibility of a range of animal species that can come into close contact with humans in the PR China. Of the species investigated, pigs, chickens and ducks were found not susceptible to infection; dogs were poorly susceptible; and cats and ferrets were highly susceptible following exposure to the virus. Respiratory transmission of SARS-CoV-2 was demonstrated between challenged and in-contact cats.

Several recent publications have shown that SARS-CoV-2 uses angiotensin-converting enzyme 2 (ACE2) as its receptor to enter human cells. This protein is expressed on the surface of certain cells in the respiratory tract. Feline ACE2 receptor bears close similarity to the human ACE2 homologue based on its amino acid composition; this may well explain the apparent susceptibility of cats and probably other members of the family Felidae to SARS-CoV-2.



CORONAVIRUS PARTICLE. CREDIT NIAID-RML

While currently there is no information on the potential susceptibility of the horse to infection with SARS-CoV-2, one published study has shown that the ACE2 host-cell receptor in the horse has similarity to its human ACE2 counterpart. The significance of this in terms of determining susceptibility of the horse to the virus remains to be seen. It should be re-emphasised that at this point in time, there is no reported evidence that SARS-CoV-2 causes infection or disease in the horse nor that horses play any role in the transmission and spread of the virus.

Undoubtedly, the state of knowledge of SARS-CoV-2 and COVID-19 will continue to be updated in the coming weeks and months.

The availability of new information on the virus and the disease should help better define and improve our understanding of the susceptibility of the horse and other domestic and wildlife animal species to the virus and delineate what role if any certain species might play in the epidemiology of this highly important human pathogen.

NATURAL RESOURCE CONSERVATION SERVICE

UK RECEIVES NATIONAL CONSERVATION INNOVATION GRANT FOR HORSE FARM STUDY

The University of Kentucky Department of Plant and Soil Sciences was awarded a Conservation Innovation Grant at the beginning of the year to study the ecological and economic impacts of resource conservation on horse farms. Funded by the Natural Resource Conservation Service (NRCS), which is part of the U.S. Department of Agriculture, this project was chosen among proposals nationally, all competing for a select few funding slots, and was fully funded with a budget of more than \$350,000 over three years.

Ray Smith, PhD, professor and extension forage specialist, and Krista Lea MS, coordinator of UK's Horse Pasture Evaluation Program, both members of plant and soil sciences within UK's College of Agriculture, Food and Environment, will lead the project. They have partnered with Jill Stowe, PhD, associate professor in agricultural economics at UK, her graduate student Sarah Sebbane, and Kathryn Payne, PhD, applied forage systems specialist from Virginia Tech.

Smith and Lea plan to visit farms that participated in a previous NRCS cost share enhancement grant in 2016 and collect on-farm measurements such as soil nutrients, plant composition, percent cover, forage quality and yield. Stowe and Sebbane will use the data as well as survey data from these farms to quantify the economic impacts of these improvements.

According to Lea, the research team anticipates economic impacts



THE KENTUCKY-BASED WEBER'S RETIRED HORSES, LLC, SERVED AS A DEMONSTRATION FARM IN THE 2016 RESOURCE CONSERVATION GRANT AND WILL ALSO PARTICIPATE IN THE 2020 CIG GRANT. PICTURED HERE, A NEWLY-INSTALLED POND THAT GRAVITY FEEDS TWO WATER TANKS WITH CLEAN WATER YEARROUND, AND A NEWLY ESTABLISHED PASTURE.

that include less hay required because improved pastures give higher forage yields; the

“THE RESEARCH TEAM ANTICIPATES ECONOMIC IMPACTS THAT INCLUDE LESS HAY REQUIRED, REDUCTION OF VET BILLS AND LOWER FERTILIZER REQUIREMENTS.”

KRISTA LEA

construction of heavy use areas should reduce vet bills by reducing the incidence of hoof bruises and/or abscesses; and more even manure distribution from improved grazing will lower fertilizer requirements.

“It might seem difficult to justify the upfront expense associated with adopting conservation practices when it comes to pasture management, especially for non-commercial

equine operations,” said Stowe. “However, we hope to be able to educate horse farm owners about the economic benefits of adopting these practices through short- and long-run cost savings. By doing so, we can contribute to the increased rate of adoption of these environmentally beneficial practices.”

Payne will work closely with UK to implement several practices on five farms in Virginia. In addition, Pennington Seed has agreed to donate seed for use in the Virginia pasture renovations.

“It’s easy to say that something only works in Kentucky because of its unique horse industry,” Smith said. “Demonstrating these practices and economic benefits in areas with a very different equine population is crucial for having impacts across the country.”

“The 2016 grant was a great success, with many more farms interested than

we could accommodate, and successful conservation practices implemented. We hope to build on that, and put some real numbers to those practices. The hope is that these practices, and the benefits we can show from them, will encourage other farms to implement them as well," said Lea.

Cost share programs are available to horse farms in Kentucky through NRCS and the Kentucky Governor's Office of Ag Policy. These programs vary by county, so the best way to stay up to date is to have regular

contact with your local NRCS and Cooperative Extension offices. Many offer newsletters to keep people informed of approaching deadlines or new programs. NRCS is also currently seeking proposals for on-farm conservation and soil health test projects. Learn more at <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/>.

| *Krista Lea MS, coordinator of UK's Horse Pasture Evaluation Program within UK's Department of Plant and Soil Sciences, provided this information.*

EASTERN TENT CATERPILLAR EGG HATCH UNDERWAY FOR CENTRAL KENTUCKY

The eastern tent caterpillar hatch is underway, with the first instances seen in Central Kentucky March 12, according to entomologists in the University of Kentucky College of Agriculture, Food and Environment.

According to Jonathan Larson, PhD, entomology extension specialist, after spending about nine months as eggs in masses on twigs of wild cherry and related trees, the first tiny eastern tent caterpillars of the season are now leaving their eggs. The egg hatch normally occurs at forsythia bloom.

The larvae are among the first insects to become active in the spring and are well-equipped to cope with Kentucky's erratic temperature swings.

According to UK's entomology researchers, egg hatch occurs over several weeks in early spring. This increases the chance for

survival in case of late freezes. The caterpillars grow and develop when the temperature is above 37 degrees F. Their preferred food plants are wild cherry, apple and crabapple, but they may be found on hawthorn, maple, cherry, peach, pear, and plum as well.

When mature, the 2- to 2.5-inch long, hairy caterpillars have a habit of wandering from their host trees to seek protected areas to spin their cocoons, or to seek additional food if their natal tree becomes defoliated. At such times, they may crawl along fence lines and into pastures.

Consumption of large numbers of caterpillars by pregnant mares caused staggering foal losses in the Mare Reproductive Loss Syndrome outbreak of 1999-2001. MRLS can cause early- and late-term foal losses or weak foals. UK researchers conducted studies that revealed horses will inadvertently

UPCOMING EVENT BOARDING CONTRACTS WEBINAR

Join Extension Horses on Thursday, April 23 at 6 p.m. EST for its next webinar, titled, "Fine-Tuning Equine Boarding Contracts."

This will be a timely discussion on the importance of having well-developed equine boarding contracts. Julie Fershtman, one of the nation's leading Equine Law practitioners and author of four books, will cover the key components of an effective boarding contract, including areas to consider for emergency planning. Time for questions will also be included.

Julie Fershtman is a shareholder with the law firm Foster Swift Collins & Smith, PC, in Michigan and is widely recognized as one of the nation's leading Equine Law practitioners. Her practice crosses all equine breeds and disciplines and serves stables, insurers, professionals, associations, businesses, show management, trainers and clinicians across the U.S.

Registration is free, but required. To register, visit https://pub.cce.cornell.edu/event_registration/main/events_landing.cfm?event=EquineBoardingContracts_225. Once registered, individuals will receive a link to join the webinar.



EASTERN TENT CATERPILLAR, PHOTO: UK AG COMMUNICATIONS SERVICES

eat the caterpillars when present in pastures and feedstuffs. It is the caterpillar hairs, specifically the cuticles of those hairs, which embed into the lining of the horse's alimentary tract. Once that protective barrier is breached, normal alimentary tract bacteria may gain access to and reproduce in sites with reduced immunity, such as the fetus and placenta.

If practical, farm managers should move pregnant mares from areas where wild cherry trees are abundant to minimize the chance of caterpillar exposure. The threat is greatest when the mature caterpillars leave trees and wander to find places to pupate and transform to the moth stage.

Eastern tent caterpillars are also a nuisance to people living near heavily infested trees. The nests and defoliation are unsightly, and the caterpillars may wander hundreds of yards in search of protected sites to spin cocoons and pupate.

"Managing ETC in small ornamental trees, such as flowering crabapples, is easy. Just wear a pair of grocery store plastic bags like mittens, climb a stepladder, pull out the tents, turn the bags inside out to 'bag' the caterpillars, and stomp them," Daniel Potter, PhD, professor of entomology said.



PHOTO COURTESY LEE TOWNSEND

"Pruning out nests in ornamental trees sounds great, but in reality, by the time they are noticed, they're often in branch crotches where pruning will compromise the symmetry of the tree.

"Spraying the flowering fruit and decorative trees preferred by the caterpillars can be a bee hazard – and with some products, a label violation – because the trees are in bloom with bees visiting them at the same time eastern tent caterpillars are active," he said.

"Except for bacillus thuringiensis, which is not all that effective once the ETC are about half-grown, the only spray product

I know of that controls ETC and is bee-compatible is Acelepryn (chlorantraniliprole). That is available in a formulation used mainly by professional grounds managers and arborists, but has not yet found its way into homeowner spray products."

According to Potter, caterpillar management around horse farm paddocks comes down to keeping pregnant mares away from infested trees and either removing or not planting preferred host trees near paddocks. In addition to those preventive measures, controlling the caterpillars with insecticides may be warranted in some settings. That may require treating tall trees that are difficult to spray.

For the latter scenario, professional arborists treat via trunk injection. Products labeled for eastern tent caterpillar control include Tree-äge (emamectin benzoate), Inject-A-Cide B (Bidrin), Abacide 2 (abamectin) and Lepitect (acephate). End users should read and follow all label instructions. All four of those injectable products are labeled for use on horse farms.

For farms that are interested in prevention over the winter months, Larson recommended farms search for and destroy egg masses before they hatch.

"Egg masses can be seen over the winter, they look like sparkly, pyrite gum wrapped around twigs and branches," he said.

For more information about how to assess trees for egg masses, the UK Entomology publication, *Checking Eastern Tent Caterpillar Egg Masses*, is available at <https://entomology.ca.uky.edu/ef449>.

| Holly Wiemers, MA, APR, communications and managing director for UK Ag Equine Programs provided this information.

RESPONDING TO THE CALL FOR PERSONAL PROTECTIVE EQUIPMENT

During the COVID-19 pandemic, personal protective equipment has been critically low in availability across the U.S. and desperately needed. Several faculty members from the University of Kentucky's College of Agriculture Food and Environment have jumped in and donated supplies from their labs to UK HealthCare. #TeamKentucky



EMMA ADAM, DVM, PHD, DACVIM, DACVS, ASSISTANT PROFESSOR, RESEARCH AND INDUSTRY LIAISON AT THE GLUCK EQUINE RESEARCH CENTER AND CARLEIGH FEDORKA, PHD, POSTDOCTORAL SCHOLAR AT THE GLUCK CENTER, COLLECTED AND DONATED SURPLUS MASKS, GLOVES AND GOWNS FROM THE GLUCK CENTER TO THE UNIVERSITY OF KENTUCKY MEDICAL CENTER.



JACKIE WAHRMUND, PHD, EQUINE SCIENCE AND MANAGEMENT LECTURER IN UK'S DEPARTMENT OF ANIMAL AND FOOD SCIENCES SHARED THIS MESSAGE ON FACEBOOK AS SHE DONATED SUPPLIES: "GOVERNOR ANDY BESHEAR SAID THEY NEED GLOVES. WE HAVE SOME! WE DONATED 66 BOXES OF GLOVES, 400+ LAB COATS, 250 MASKS AND A BUNCH OF CLOROX WIPES TO THE UK HOSPITAL. THESE WERE OUR SUPPLIES FOR ASC 101 LABS AT UK."



UK VETERINARY DIAGNOSTIC LABORATORY'S MARVIN REDMON, MAINTENANCE SECTION CHIEF, ON HIS WAY TO THE UK HOSPITAL WITH SUPPLIES THE LAB COULD SPARE.

A SECOND GLUCK CENTER DELIVERY WAS FACILITATED APRIL 10 BY MARTIN NIELSEN, DVM, PHD, DIPL. ACVM, SCHLAIKJER PROFESSOR OF EQUINE INFECTIOUS DISEASE, ASSOCIATE PROFESSOR IN THE UNIVERSITY OF KENTUCKY DEPARTMENT OF VETERINARY SCIENCE AT THE GLUCK EQUINE, AND ADAM.

UK STUDENT EVALUATING TICK POPULATION

Ticks are a concern for anyone who spends a significant amount of time outdoors. A University of Kentucky entomology graduate student is collecting ticks from across Kentucky to determine the make-up of the state's tick population.

Anna Pasternak, a student in the UK College of Agriculture, Food and Environment, is gathering information for the new Kentucky Tick Surveillance Program. She is conducting the program in partnership with the Kentucky Department of Public Health. The program will provide insights into the ticks found in the state and will give UK entomologists, public health professionals, government officials and other stakeholders valuable information to help them prepare for new tick species entering the state and find ways to minimize the effects of tick-borne diseases.

"With its many forests, humidity and large deer population, Kentucky provides an ideal environment for many tick species," said Jonathan Larson, PhD, UK extension entomologist and a member of Pasternak's master's degree advisory committee. "Anna's survey will give us a good picture of the types of ticks that are out there, so we can minimize their effects."

Since she began her graduate degree program in January 2019, Pasternak has cataloged more than 2,700 ticks from across Kentucky. Before her survey, only 36 counties had any type of tick-related data. Now, more than 90 counties have some information about the ticks in their area. In 2019, Pasternak collected ticks from public areas from April



FEMALE VERSIONS OF THE MOST COMMON TICKS FOUND IN KENTUCKY ARE FROM LEFT: THE AMERICAN DOG TICK, THE LONE STAR TICK AND THE BLACKLEGGED TICK. PHOTOS COURTESY OF ANNA PASTERNAK, UK ENTOMOLOGY GRADUATE STUDENT.

through September, the time when ticks are the most active. She is doing so again this year. She also accepts submissions from Kentucky veterinarians and UK Cooperative Extension Service agents.

"Within the past year, the most common ticks found in Kentucky are the lone star tick, blacklegged tick and the American dog tick. All are vectors of human diseases," Pasternak said. "These ticks and their pathogens are established throughout the state."

Fortunately, only a small percentage of these ticks transmit diseases. Most bites are an itchy nuisance that last between seven and 10 days.

Thus far, the lone star tick has been the most common tick in Pasternak's survey. Female lone star ticks are by a white spot on their backs, while males are a reddish-brown. Lone star ticks are vectors of human ehrlichiosis, a bacterial disease and alpha-gal syndrome, known as the "red meat allergy." All developmental stages of the tick will feed on humans, and unlike other tick species that lay in wait for a host, lone star ticks actively seek out a blood meal.

The blacklegged tick is the only species that tends to be active year-round, and it is the only vector of Lyme disease. Blacklegged ticks have a reddish-brown body, dark head, long mouthparts and dark legs. Males have a dark plate that covers their whole body, while females have a dark plate that only covers half of their body.

The American dog tick is the primary vector of Rocky Mountain spotted fever. It is reddish brown with mottled white markings on its back. Only adult American dog ticks feed on humans.

"For Lyme disease and Rocky Mountain spotted fever to transmit to humans, ticks have to be attached to a person for several hours. That's why it's important for people to check themselves for ticks every few hours while outside and especially on areas of their body where ticks are commonly found like the behind the ears, hair, neck, legs and around the waist," Larson said. "Prompt tick removal using fine-tipped tweezers can significantly lower a person's risk for getting a tick-related disease."

Members of the public interested in submitting ticks to Pasternak for inclusion in

the Kentucky Tick Surveillance Program should contact their local office of the UK Cooperative Extension Service to see if they are allowing sample submissions during the COVID-19 pandemic.

Additional information on tick bite prevention and proper tick removal is available in UK entomology's ENTFACT 618: Ticks and Disease in Kentucky. This document is available online at <https://entomology.ca.uky.edu/ef618> or by contacting a local extension office.

ef618 or by contacting a local extension office.

| *Katie Pratt is an agricultural communications specialist with UK's College of Agriculture, Food and Environment.*

PROTECTING HORSES AND PASTURES FROM TICKS

Ticks are typically active from spring into fall in Kentucky. The lone star tick and the American dog tick are the most troublesome species in Kentucky. Lone star tick bites are very irritating and tick feeding wounds can become infected. Check with your veterinarian about tick-borne disease incidence in your area.

Protecting horses from ticks can be challenging. They usually pick up ticks while grazing in overgrown pastures, next to woods or while being ridden through tick-infested areas. There are no shortcuts or magic tricks, but it helps to use the tick's perspective when developing a management strategy.

Ticks spend most of their lives on the ground, digesting a blood meal, molting to the next developmental stage, or waiting for a host. Dry air and direct sunlight are their enemies. Ticks survive in brushy, overgrowth that provides increased humidity, protection from direct sunlight and shelter for animals that are important hosts. Small mammals and deer help to support tick populations and move them around. Horses with access to scrubby overgrowth or along woods or tree lines are very likely to pick up ticks.

PASTURE MANAGEMENT

Habitat management is the best way to manage tick-infested pastures and grazing areas. Mow and remove brush as practical



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

to eliminate the protection ticks need to survive while they aren't on hosts. When possible, use temporary fencing to keep horses out of areas that cannot be cleared. Habitat management is the best long-term route to reducing tick problems. In addition, cleared areas discourage wildlife that can reintroduce ticks and might provide improved grazing areas.

In severe cases, you might need to apply an insecticide spray to pasture margins along wooded or overgrowth areas to knock back tick numbers. Remove as much scrub vegetation as possible, and use sufficient water to treat the foliage thoroughly.

Follow grazing restrictions and

keep horses out of treated areas as required by the label.

PROTECTION AND REMOVAL

Wipe-on and spray-on products containing cypermethrin or permethrin can provide several hours of protection during rides in infested areas. Dust, dirt, perspiration and water shorten protection time, making reapplication a necessity. Horses pick up as they move through infested areas, so treat their legs and underbellies.

Check horses regularly for ticks during your ride and thoroughly when finished. Ticks tend to move upward and find places to attach where the hair coat is thin. Chest and areas where fore and hind legs join the body are common attachment sites. Often, it is easier to feel ticks than see them. Scratch with your fingertips to find small bumps that indicate the smaller, immature stages. Use tweezers to hold the tick as close to the skin as possible and remove it with a steady straight pull. Treat the bite site with an appropriate antiseptic ointment. Ticks are tough opponents but horses can be protected and pasture infestations can be reduced.

| *Lee Townsend, PhD, professor emeritus and entomologist within the University of Kentucky College of Agriculture, Food and Environment, provided this information.*

NEW HERBICIDE RESEARCH

PRELIMINARY RESULTS IN FOR WARM SEASON GRASS CONTROL IN HORSE PASTURES

Warm season annual grasses pose a major challenge in Kentucky horse pastures over the summer. They tend to germinate in areas where perennial cool season grass stands are thin from overgrazing, low soil fertility or inadequate rainfall.

Some, like crabgrass, have good forage quality and are readily grazed by horses, but others, like yellow foxtail have little to no forage quality. Foxtail also has long hairs on the seed heads – called awns – that have been known to embed in horses' gums and cause irritation or sores.

Regardless of species, warm season annuals hold space where you would prefer to have cool season perennial grasses, and since they die out after frost, there is bare soil all winter.

Until recently, no herbicides have been available to control warm season annual grasses in perennial cool season pastures. Prowl H2O is now labeled for use in cool season grass pastures and researchers are working to understand how best to utilize it on Kentucky horse pastures.

Bill Witt, PhD, professor emeritus within the University of Kentucky's Department of Plant and Soil Sciences partnered with the UK Horse Pasture Evaluation Program to run a series of plot studies on Lexington-area horse farms. Mill Ridge Farm and Shadwell Farm both generously supported the research, financially and by providing use of land. Asbury University senior Chi Jing Leow collected the data as part of his senior research project and internship with the Horse Pasture



YELLOW FOXTAIL (SETARIA GLAUCA) IS COMMON IN KENTUCKY HORSE PASTURES BUT CAN IRRITATE HORSES' MOUTHS AND REDUCE PASTURE YIELD AND QUALITY. UNTIL RECENTLY, NO HERBICIDES HAVE BEEN AVAILABLE TO CONTROL WARM SEASON ANNUAL GRASSES IN PERENNIAL COOL SEASON PASTURES. PROWL H2O IS NOW LABELED FOR USE IN COOL SEASON GRASS PASTURES AND RESEARCHERS ARE WORKING TO UNDERSTAND HOW BEST TO UTILIZE IT ON KENTUCKY HORSE PASTURES. PHOTO BY CHI JING LEOW.

Evaluation Program.

Prowl H2O was sprayed at two different rates and three different application dates during the spring of 2019 in a randomized complete block design at two locations. No injury of cool season grasses was observed at either location. Yellow foxtail populations were low in 2019, but crabgrass was well controlled using higher rates of Prowl H2O and when sprayed at the earlier dates. Plots were then over seeded in early September with orchard grass, Kentucky bluegrass and perennial ryegrass. Germination of these grasses was low due to the drought conditions last fall, but no herbicide injury was observed. The herbicide label states to wait 10 months before over seeding grasses in the fall, but during this research the waiting period was four months.

The study is being repeated again this summer to determine if the waiting period on the label can be reduced.

This herbicide is a pre-emergent, meaning it kills below ground seedlings. Therefore, it must be applied before germination to be effective. Witt recommends application between mid-April and mid-May for an average year, though the optimal timing is highly variable. The important thing is to apply before any warm season annual grasses start to germinate. One rule of thumb is that when annual grasses start to germinate in warm spots, like along a driveway, the south face of a building, etc., then it's time to spray. Apply 1.1 to 4.2 quarts per acre. It can be applied as sequential treatments 30 days apart, but not to exceed a total of

4.2 quarts per acre per year. There are no grazing restrictions for horses or beef cattle.

While this new product could be a real benefit to horse farms, it can have some unintended consequences. Many managers likely do not realize how much crabgrass their horses graze on over the summer. Prowl H2O applications will reduce crabgrass, therefore additional hay feeding may be required because the crabgrass is not available for horses to consume. Additionally, removing crabgrass may increase grazing of cool season grasses, creating a thinner fall stand. Preliminary work shows that nimblewill may also benefit from Prowl H2O applications because it can spread into bare areas typically held by warm season annual grasses. Nimblewill spreads primarily by stolons, therefore will not be injured by this herbicide.

Because crabgrass and foxtail are removed, pastures treated with this herbicide may be thinner going into fall and winter, so good grazing management, soil fertility and potentially over seeding will be needed to thicken stands.

The best way to prevent the germination of warm season annual grasses or any other unwanted plants is to maintain a thick stand of desirable cool season grasses. Always read and follow all label instructions before applying any pesticide.

| Information was provided by University of Kentucky Department of Plant and Soil Sciences members Bill Witt, PhD, professor emeritus; in conjunction with Chi Jing Leow, senior at Asbury University and UK Horse Pasture Evaluation Program intern; Krista Lea, MS, coordinator of the University of Kentucky's Horse Pasture Evaluation Program; and Ray Smith, PhD, professor and extension forage specialist.

UK, THE HORSE.COM LAUNCH NEW "EQUINE INNOVATORS" PODCAST

The Horse.com has partnered with the University of Kentucky's College of Agriculture, Food and Environment to launch a new podcast series. Called "Equine Innovators," the series, which is sponsored by Zoetis, interviews UK researchers to learn more about the important work they do each day.



The Horse announced the series in February with the following statement, "Each day researchers at universities and other institutions around the world are investigating new ways to care for and understand our horses. Whether you realize it or not, the work they do influences your daily interactions with your horses. That formulation you scoop into feed buckets each morning? The supplements that support your horse's joint health or metabolic function? That medication that saved your horse's life? You can thank an equine researcher for being curious, having a question and then seeking answers. In our new podcast series, 'Equine Innovators,' we'll talk to those researchers to learn more about their work."

The guest for the first episode in the series Feb. 20 was Martin Nielsen, DVM, PhD, Dipl. ACVM, an equine parasitologist and associate professor at UK's Gluck Equine Research Center. He also co-authored the American Association of Equine Practitioners' Parasite Control Guidelines. You can find that episode at <https://thehorse.com/185170/equine-innovators-a-discussion-with-university-of-kentuckys-dr-martin-nielsen/>.

The next episode will air this month and feature Jill Stowe, PhD, associate professor in agricultural economics.

You can find "Equine Innovators" on TheHorse.com, iTunes, Spotify, and Google Podcast.

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

UK DEPARTMENT OF VETERINARY SCIENCE RESPONDS TO NOCARDIOFORM PLACENTITIS

The 2019-2020 foaling season has seen an increase in reports of Nocardioform placentitis, both in cases submitted to the University of Kentucky's Veterinary Diagnostic Laboratory and in reports from equine practitioners in the field. Nocardioform placentitis is an equine placental disease affecting pregnant mares and their foals during pregnancy.

UK's VDL provides real-time surveillance of this and other livestock diseases and has been sending reports updating practitioners and farms about what is being seen since positive tissue samples started appearing in late October. Additionally, the Gluck Equine Research Center announced at its foundation board meeting Feb. 6 that it was activating Koller Emergency Response Funds to immediately augment existing research efforts and launch new projects to study the disease while it is occurring, with an aim of understanding the disease better. Currently, early identification of the disease is a challenge, making it difficult to identify at-risk mares and treat them proactively.

"Obviously, those of us who are private equine practitioners have been working closely on a daily basis with area horsemen in Central Kentucky and have been extremely engaged in sharing our experiences of Nocardioform placentitis cases from these most recent occurrences, as well as our experiences observed in previous years," said Stuart Brown, DVM, equine veterinarian from Lexington-based Hagyard Equine Medical Institute and Gluck Equine Research Foundation Board chair. "These conversations



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

with the research team at the Gluck Center, along with specialists at the UK VDL, provide all of us a unique opportunity to collaborate on our observations to understand the presentation of these cases."

The disease, a complex and relatively rare condition caused by bacteria, primarily *Crossiella equi* and *Amycolatopsis* spp., affects the placenta of the pregnant mare and can cause foal losses from late-term abortions, stillbirths, prematurity or early neonatal deaths due to placental insufficiency.

While it is typical to see a handful of cases each year, an increase in positive cases reported usually only occurs intermittently. The last increased cluster of cases occurred during the 2017 season, and before that, during the 2011 season. While there have been similar numbers of cases reported by the UK VDL compared to the 2011 season, it is important to note that positive cases refer to all samples received, including affected placental tissues, not necessarily the loss of a foal. In fact, in many cases where the placenta might have been affected, the foal was born healthy and

unaffected.

Because the Central Kentucky region lies at the heart of the world's Thoroughbred breeding industry, and is home to the world-renowned equine medical infrastructure that cares for that population, it stands to reason that the highly tuned equine health surveillance mechanisms in place would catch the disease when it occurs. Cases of Nocardioform placentitis have also been reported sporadically in Florida, South Africa, Italy and, most recently, New Zealand.

"Given the number of foals born in this area each year, the expertise of the local veterinarians and farm managers and the surveillance efforts of the UKVDL, we are well positioned to identify these types of occurrences as they emerge," said David Horohov, PhD, chair of the Department of Veterinary Science at UK, director of the Gluck Center and Jes E. and Clementine M. Schlaikjer Endowed Chair at the Gluck Center.

"Many of our farms have experienced little or limited cases while others have noted incidence numbers that would be greater

than anticipated,” Brown said. “On many farms with the vigilant surveillance associated with farms in Central Kentucky, there are mares that have delivered foals of acceptable size and development from cases that have been identified by farm managers and veterinarians working together to treat suspected cases before foaling. It is these experiences that will help us solve this puzzle and help us understand the incidence of occurrence associated with *Nocardioform* placentitis.”

Given the pressing need to develop better diagnostic tests and preventative strategies, UK is proceeding with new research projects to gain additional information about the mare’s response to *Nocardioform* placentitis. This coordinated effort involves faculty with expertise in reproduction, microbiology, immunology and pathology, as well as collaborations with clinical partners throughout the region.

Nocardioform placentitis abortions typically occur between November and June, with a peak incidence in January and February. The majority of affected pregnancies occur in the last trimester of gestation, and the identification of nocardioform lesions on the placenta of term pregnancies is a common presentation.

It is generally accepted that this is an extremely complicated disease, primarily because there does not seem to be a simple causative relationship between the pathogen(s) and the condition. Another complicating factor is that identification of affected mares is difficult and often delayed, meaning harm to the placenta-fetal environment may already have occurred by the time cases are identified.

The disease was first identified and tracked in 1986. Related bacteria are ubiquitous in the U.S. and around the world,



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

but researchers have been unable to pinpoint where the causative bacteria emerge in the environment.

According to Barry Ball, DVM, PhD, Dipl. ACT, Albert G Clay Endowed Chair in Equine Reproduction at the Gluck Center, diagnosing affected mares before an abortion diagnosis remains difficult. While *Nocardioform* placentitis diagnoses can be made following pathological examination of the placenta, pre-partum/abortion diagnosis relies on abdominal ultrasonographic examination of the uterus, where changes may only be noted once the disease has progressed significantly.

He said the intermittent occurrence of the disease complicates researchers’ work to better understand the origin

of *Nocardioform* placentitis and improve its diagnosis.

According to research done at UK, the disease will sometimes result in the loss of the foal, but other times may only show up as a change or series of changes in the placenta with no noticeable effect on the foal. Because the bacterial infection is limited to the placenta, the foal itself is not infected. The foal can be underweight at birth or born healthy with the only sign anything was amiss being the telltale lesions found on the placenta. Treatment and prevention options can be limited due to timing and questions surrounding the cause and progression of this disease.

According to Ball, attempts to induce the infection in mares by intrauterine inoculation of *Crossiella equi* at breeding and in pregnant mares via oral, intravenous and intranasal routes have been unsuccessful. Importantly, the ecology and biology of the causative organisms, *Crossiella equi* and *Amycolatopsis* spp. remain unknown, as these organisms have only been isolated from affected placentae.

Prior work at the Gluck Center has suggested that a hot and dry fall may be correlated with increases in the disease seen during the following winter and spring foaling season, but more research is needed to confirm what that correlation means.

A retrospective study of on-farm risk factors associated with the 2010-11 series of *Nocardioform* placentitis cases also identified a number of associations that were positively associated with the incidence of the disease, including the farm being categorized as a larger farm with higher mare numbers and higher stocking density. Conversely, longer grazing times during late winter, prebreeding administration of progesterone to mares, hCG administration



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

post-breeding and NSAIDs were not noted to be associated with an increased incidence of *Nocardioform* placentitis.

Researchers also note that it is worth considering that the bacterial family responsible for *Nocardioform* placentitis may also originate as soil-born organisms, despite the failure thus far to isolate these organisms from environmental sources.

According to Ball, it appears highly likely that the disease development of *Nocardioform* placentitis is multifactorial and may involve environmental conditions (hot, dry periods in late summer) and possibly effects related to host susceptibility. Pregnancy in many species, including the mare, involves some degree of immunosuppression, and many of these bacteria may be more pathogenic in immunocompromised hosts. More research is needed to better unravel this complex disease process in the mare.

The research conducted from samples collected this spring will focus on assembling genome

sequence data from these bacteria, the role of inflammation in the disease as well as characterizing changes in gene expression identified in blood samples.

Ongoing surveillance of antibiotic susceptibility patterns of these bacteria and continued investigation of samples submitted to the UK VDL will continue as usual.

In the short term, researchers have been collecting as much information as possible while the disease is present, with an analysis of those data to begin this summer. In the longer term, the goal of the research efforts is to learn more about the disease and to provide possible diagnostic tests to identify at-risk mares so they can be treated early in the disease and limit any impact on the foal. A sustained research effort is important even in years when the disease is at a low level.

Researchers have been working with participating farms and have collected weekly blood samples from more than 200 mares suspected of having the disease, as well as samples from control

mares from the same farm that didn't have the disease. Sample collection began at the time of diagnosis and continued until foaling. Additionally, all placentas (affected and control), as well as any euthanized foals or aborted fetuses, are being evaluated at the UKVDL for definitive diagnosis.

To see the near-real time nocardioform positive sample (placenta, swabs and fetuses) distribution map and graph for the 2019-2020 reproductive season, visit the www.vdl.uk58y.edu link at http://vdl.uky.edu:8080/informer/DashboardViewer.html?locale=en_US&embedToken=c67e307c-b90c-4256-9427-8afae2438c93. A historical picture of the disease going back to 2010 can be found at http://vdl.uky.edu:8080/informer/DashboardViewer.html?locale=en_US&embedToken=d58d8dbf-bef0-4619-b57c-9d4343260338.

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

NEW REQUIREMENT FOR EIA TESTING LABS

United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) recently announced new requirements for approved veterinary diagnostic laboratories that run Equine Infectious Anemia testing. The following changes impact submitting veterinarians:

Diagnostic laboratories can now only accept samples from federally accredited (Category II) veterinarians. Practitioners can check their accreditation status here: https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/nvap/ct_areavet. Click “Check My Accreditation Status.”

Effective April 15, 2020, veterinarians must use federally

approved forms (VS Form 10-11 dated Feb 2018 or VSPS e10-11 form) or approved systems such as GlobalVetLink.

All fields in the form must be filled out or labeled as “N/A.” Diagnostic laboratories are authorized to reject incomplete forms and not test the sample.

At laboratory discretion, amended forms can be utilized as they are received within 30 days of date sample taken from the horse.

Diagnostic laboratories are required to send all non-negative test samples to the National Veterinary Services Laboratories (NVSL) for confirmation. This is due to the possibility of false

positive results on ELISA tests. This may delay the availability of tests by up to five days.

Additional information can be found here: <https://www.aphis.usda.gov/animalhealth-eia>

In the dropdown click “EIA Documents and References

Info on EIA: <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/equine/eia>

| Craig N. Carter, DVM, PhD, Dipl. ACVPM, director of the University of Kentucky Veterinary Diagnostic Laboratory provided this information.

IS IT TOO LATE TO SEED COOL SEASON PERENNIALS?

By the time you read this, we will ‘officially’ be out of the recommended period for seeding most cool season species. Experience tells me, however, that we are not done seeding cool season perennials across Kentucky. This article addresses some of the questions that I have been getting this spring.

So when is it too late to seed cool season perennials? It depends. Don’t groan, it does! For example, tap rooted legumes like alfalfa and red clover do better in spring seedings than grasses, so if you are seeding these you have a bit of a cushion of time past the official cutoff.

Well what about late-seeded cool season grasses? Frankly, this is a higher risk proposition. Grass



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

seedlings have shallow fibrous root systems and take longer to germinate than legumes. Fescue planted on April 15 will take at

least a week to 10 days to emerge under good conditions where alfalfa or red clover can be up in three. I have made successful

spring seedings of cool season perennial grasses but it sure helps if it is a wet, mild summer. I am not ruling out spring seedings of grasses but if you do, realize it is going to be challenging.

Planting decisions always involve an element of risk of failure. Being slightly out of the ideal window for seeding is a small and manageable risk. Keep in mind that the better job you do with the parts of the process you can control (like variety, fertility, seed placement and weed control), the more you increase the probability of success with spring seedings.

Weather obviously plays a big role. If some intermittent rain and moderate temperatures are predicted for the next two weeks, that gives seedlings the moisture and the environment to germinate and start establishing a root system.

The soil and site also plays a large role. Deeper more loamy soils will have more available water in the root zone and allow deeper rooting in general. These soils will be more forgiving than shallow or heavy clay soils if you have to seed later than April 15. Is the site weed free or grazed down close so that the emerging seedling has a fighting chance to compete for water and sunlight? Trying to interseed into a lot of standing

vegetation (brown or green) lowers the success rate.

Should a chain harrow be used after broadcast seeding of alfalfa on conventionally tilled ground ahead of a corrugated roller (cultipacker)? Sometimes, but only to smooth up the field and only with the smooth side down (flip it so the tines are pointed up). The corrugated roller alone is sufficient to get the seed soil contact needed for good germination and emergence of the alfalfa.

What about using a nurse crop of oats with spring seedings of alfalfa? The upside of using a nurse crop like oats with alfalfa is quick cover, prevention of erosion and perhaps a bump in the yield of the first cutting later this summer. The downside is that oats will be competitive with the seedling alfalfa, which does not do well at all in shaded conditions. This decision will likely come down to personal preference. I prefer to seed alfalfa alone, unless the site is sloping such that oats can help prevent erosion. If a nurse crop of oats is used, use a light seeding rate of 0.75 to 1 bushel per acre.

And the last one: I have just drilled clover into my fescue pasture and the grass is starting to get ahead of the seedling clover. Can I graze the fescue to minimize its competition? Yes you can. Having a good

subdivided pasture system is going to be helpful. Good grazing management is also needed. Rotate grazing animals through the paddocks fairly quickly at a higher than normal stock density and pay close attention to how low they are grazing. The high stock density will take away selectivity and result in a bit more uniform grazing pattern. Move before you think you need to, even though it seems like you are wasting feed. Clover is going to take at least a week or more before it is up and tall enough to be grazed, so you have a bit of time to graze with no chance of nipping off the new seedings. Make sure you move livestock before they get a chance to graze the new clover seedlings. Time on a paddock needs to be short, ideally no more than three or four days. You will likely need to clip some pastures anyway to remove excess grass competition.

So it is too late to plant? You have heard most of my wisdom, such as it is. Happy foraging.

| Jimmy Henning, PhD, extension professor in the Department of Plant and Soil Sciences, provided this information. Credit to the Forage News from University of Kentucky's Horse Pasture Evaluation Program.

NOTABLE MENTIONS

UK EQUINE RESEARCH AND OUTREACH IN THE NEWS

Some notable mentions of recent University of Kentucky research and outreach efforts.

THANKS TO GRAYSON-JOCKEY CLUB, UNIVERSITY OF KENTUCKY COLLECTS 230 SAMPLES FOR PLACENTITIS RESEARCH

Source: Grayson-Jockey Club news release and the Paulick Report, April 15, 2020

While all the projects funded by Grayson-Jockey Club Research Foundation must show relevance to the improvement of equine health and welfare, some projects

are extremely time-sensitive. One such project has already gotten a crucial boost from the organization in the midst of this year's foaling season in Central Kentucky.

“Given that we see nocardioform placentitis only on a sporadic basis, it is essential we

are able to act quickly and acquire samples during an outbreak. We are extremely grateful to Grayson for their support of this effort. It is only through the collection of samples for further analysis and continued screening of the identified bacteria for antibiotic sensitivity and resistance that we will be able to improve our understanding of this disease,” said David Horohov, PhD, chair of the Department of Veterinary Science and director of Gluck Equine Research Center, University of Kentucky.

Through the funds committed by Grayson, the Gluck Equine Research Center was able to collect 230 case and control mares for future research.

Read the story in its entirety here: <https://www.paulickreport.com/horse-care-category/thanks-to-grayson-university-of-kentucky-collects-230-samples-for-placentitis-research/>

NEEDED COMMITMENT

Source: BloodHorse story by Frank Angst, April 15, 2020

The details outlined in the March 9 federal indictment of Jorge Navarro suggest a years-long scheme in which cheating trainers were well ahead of racing’s

attempts—heavily reliant on post-race testing—to keep the game fair.

To Kentucky’s credit, the commonwealth will not stand pat. Lawmakers this month committed \$1.5 million to a testing lab supporters believe will bring new levels of integrity. Another \$500,000 allows the Kentucky Horse Racing Commission to hire a safety steward and investigators to provide front-end protection for a sport where alleged cheaters have shown an ability to stay ahead of post-race testing.

Read the story in its entirety here: <http://cs.bloodhorse.com/blogs/wgoh/archive/2020/04/15/needed-commitment-by-frank-angst.aspx>

PUNISHMENT VS. NEGATIVE REINFORCEMENT

What’s the difference between punishment and negative reinforcement, and how do they apply to learning theory?

The terms “punishment” and “negative reinforcement” sound similar to many people unfamiliar with learning theory. However, they definitely are not the same. Camie Heleski, PhD, lecturer with the UK Equine Science and Management program, explains

what each is and how they apply to working with horses.

Hear more at this piece posted April 5 at The Horse.com: https://thehorse.com/186778/punishment-vs-negative-reinforcement/?fbclid=IwAR2758eLFxIPoVpA_

WHAT’S THE DIFFERENCE BETWEEN ANIMAL WELFARE AND RIGHTS?

Camie Heleski, PhD, lecturer with the UK Equine Science and Management program, talks about what distinguishes welfare from rights and how the two concepts apply to caring for and training our horses.

Animal welfare and animal rights are two related but separate concepts important to understanding horse well-being. Heleski, shares how she teaches her students about these two ideas, as well as the role of welfare in training horses.

Hear more at this piece posted April 4 at The Horse.com: https://thehorse.com/186770/whats-the-difference-between-animal-welfare-and-rights/?fbclid=IwAR3nHmlovrPsD9UFkwNwgRZjnl89zCYhTBf41mYKp-Kpw_61byiBVaJFc4okP9hdPRqWrcvm9NPOLxpp-aRUO8VMk-Z4vaWalAr5XE

UK FORAGE EXTENSION YOUTUBE VIDEOS CAN HELP PRODUCERS WORK THROUGH ISSUES THIS SPRING

The KYForages YouTube page has more than 250 educational videos to help forage and livestock producers improve their operations, particularly during this time of social distancing.

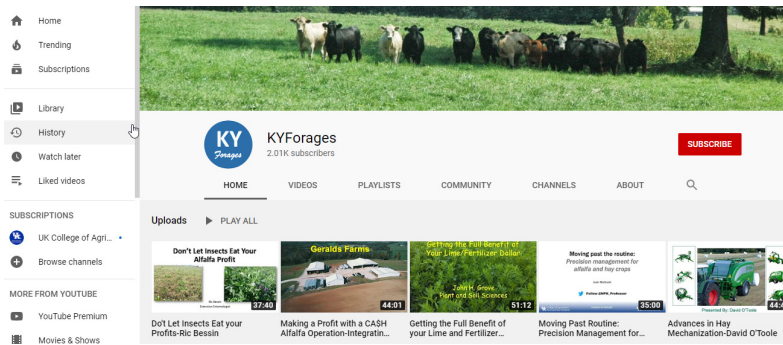
Spring is a busy time for livestock and forage producers. Producers are turning animals onto pastures, renovating fields that

need a little TLC and preparing for the first cutting of hay. While the COVID-19 pandemic has changed the way University of Kentucky forage and livestock specialists connect with producers, they are still available to serve them.

“Although our delivery method may be a little different than normal, we are working

closely with our county extension agents to provide relevant and timely information to producers throughout the commonwealth,” said Chris Teutsch, PhD, forage extension specialist in the UK College of Agriculture, Food and Environment.

While specialists are working with their clients via phone, email



and through agents, producers can find educational information to help them troubleshoot problems or just get them thinking about new ideas for their pastures at UK forage extension’s KYForages YouTube page. The page is located at <https://www.youtube.com/c/KYForages> or using the search term “KYForages YouTube” through an internet browser.

The page features more than 250 instructional videos with numerous College of Agriculture, Food and Environment specialists. Specialists walk producers through all aspects and issues related to livestock and forage management. Presentations from UK forage events from the past five years and virtual tours of Kentucky producers’ farms are additional

features on the page.

“With nearly 2,000 subscribers, the KYForages YouTube page is one of the most visited forage production pages in the country,” said Ray Smith, PhD, professor and extension forage specialist in the Department of Plant and Soil Sciences. “Producers who find themselves spending more time at home these days may want to check out some of the excellent presentations given at past UK forage and livestock events and view how-to videos that can help them improve their operations.”

| Katie Pratt is an agricultural communications specialist with UK's College of Agriculture, Food and Environment.

COVID-19

LIVESTOCK SPECIALISTS SAY PEOPLE CAN LEARN IMPORTANT LESSONS FROM ANIMALS IN TOUGH TIMES

With all the uncertainty in the world during the COVID-19 crisis, University of Kentucky animal scientists say people could learn quite a few lessons from farm animals.

Animals have their own culture in how they deal with life and the stresses that come along. They have relationships, disagreements, collaborations and many other things to which humans can relate.

“Cattle are normally quiet, but they become vocal when separated from the herd or when they are looking for a herdmate or a calf,” said Jeff Lehmkuhler, PhD, beef specialist for the University of Kentucky College of Agriculture, Food and Environment.



PHOTO CREDIT: UK COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

“Seems like the loudest voice is always heard. I think we could be more like that as people and leverage our loud voice toward the important stuff.”

Bob Coleman, PhD, PAS, Dip. ACAN, associate professor and equine extension specialist in the Department of Animal and Food Sciences, said that while we are feeling confined by social distancing orders, we can take heart that horses get irritable in the same situations.

“When horses are confined with little to do, they get grumpy,” he said. “Perhaps horse owners could find mutually enjoyable activities with their horses and alleviate boredom. Also, we should have patience with those around us, because they may be having a difficult time feeling bored and confined as well.”

Animals also know how to take care of each other. Sheep know their survival is more likely in a flock of many. Being alone, makes

them more vulnerable to predators. While most Americans are having to practice social distancing right now, they can still take advantage of modern technology to “flock” together and ward off predators of illness, fear and boredom.

“We can also learn a lot from the way shepherds tend to the flock,” said Debra Aaron, PhD, professor in the Department of Animal and Food Sciences. “The shepherd takes care of the entire flock, but he or she is also very good at seeking out a sick or injured animal with that flock. When the shepherd takes care of the sick individual, the entire flock is healthier and stronger.”

Animals know when to push through, when to play and how to focus. They live focused on the moment and don’t get distracted by the past or the future. They heed their instincts to stay alert to their senses and to each other. They stay focused on what is most important. And, when it’s all too

much for them, they understand how important it is to rest. They seem to instinctually know they need rest to thrive and get along.

Check on each other; learn to recognize the signs of stress in your tribe.

“Signs of illness and pain in cattle can often be subtle and easily overlooked,” said Katie VanValin, PhD, UK beef specialist. “Overlooking mild symptoms leaves the door open for larger problems in the herd. Now, while we are self-distancing, we need to remember that what might cause mild illness in some, could be a much greater problem for others.”

| *Aimee Nielson, Agricultural Communications Specialist, UK College of Agriculture, Food and Environment, provided this information. Source: edited March 23 news release.*

We hope you have enjoyed the Equine Science Review, which highlights research and outreach efforts at the University of Kentucky. The Review is a monthly newsletter from the University of Kentucky College of Agriculture, Food and Environment that highlights the important equine work happening at the university. UK is home to world-class research and service excellence in equine health, safety, nutrition, pasture and forages, economics, engineering, environmental compliance and many others. Programs at UK offer the depth and breadth of scope fitting its location in the heart of horse country. Have updates delivered to your inbox each month by subscribing to the Review at <https://mailchi.mp/uky/equinesciencereview>.



Ag Equine Programs
College of Agriculture, Food and Environment