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## Horses Need Extra TLC During Cold, Wet Winter Weather

The 2018-2019 winter has served up roller coaster temperatures and record precipitation in Kentucky. Our equine friends are quite adaptive to these variations, but horse owners must provide additional care to help animals cope and thrive when temperatures dip low and are accompanied by wet and windy conditions.



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Horses adapt well to winter weather, but they require extra attention when the temperatures dip low and are accompanied by wet and windy conditions.

“Horses have three basic needs—shelter, feed, and water,” said Bob Coleman, PhD, horse specialist for the University of Kentucky (UK) College of Agriculture, Food and Environment, in Lexington. “You can easily manage horses outside, but you’ll have to provide a few creature comforts.”

Shelter should provide protection from the wind and the different forms of precipitation Kentucky sees in winter, such as freezing rain, sleet, snow, and ice. Coleman said horses’ hair coats can effectively protect them from cold temperatures, but they’re less able to guard against windy and wet conditions.

“If a horse’s coat gets wet in rain or snow, it can dramatically chill them,” he said. “You may need to bring them inside a barn to dry and warm up. Otherwise, three-walled shelters that guard against prevailing winds do a nice job of protecting horses from the elements.”

He also recommended having bedding in shelters as long as they drain well and stay dry.

Horses are very cold-tolerant and can comfortably withstand air temperatures down to around 13 degrees Fahrenheit. When the temperatures drop below that, however, owners should think about adding extra hay to their feeding program. In cold weather, horses need more energy to stay warm.

“Adequate high-quality feed is very important, especially in the winter,” Coleman said. “As horses eat and digest hay, digestion creates internal heat,

which can help them maintain body temperature.”

If owners are unsure of their hay quality, slowly adding a daily concentrate can help provide a complete ration.

Many horse owners use blankets, which can be helpful but also require extra attention.

“You need to remove the blanket periodically to groom and check the horse’s coat,” Coleman said. “We have some extreme temperature variations, and if that blanket gets wet or if it warms up and traps moisture from the horse sweating, it could be detrimental to the horse’s health and coat condition. So, if you must use blankets, make sure you check the horse often.”

It’s also important to ensure blankets fit properly. A blanket that is too big or too small can cause coat-damaging friction among other issues.

Water remains the most crucial element in winter horse care. If a horse drinks less water, he might eat less. Additionally, proper digestion requires adequate water intake.

“It’s not uncommon to see an increase in impaction colics in horses that eat high-forage diets without drinking enough water,” Coleman said. “Make sure the water you’re offering isn’t too cold, and check for problems with your tank heaters.” **UK**

>Aimee Nielsen is an agricultural communications specialist within UK’s College of Agriculture, Food and Environment.

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## Agents of Abortion

As horse breeders eagerly await the impending birth of their foals, they can't help but fear one thing: abortion. Abortion is foal loss before 300 days of gestation. In worst-case scenarios, breeding facilities don't lose just one foal; a pathogen (disease-causing microorganism) causes an abortion storm in which several mares lose their pregnancies around the same time. Regardless of the magnitude of losses, abortion can be a devastating emotional and financial blow to a horse owner.

It's important to understand the various reasons mares abort and know whether yours is at risk. In this article we'll review some of the most common infectious and noninfectious causes.

### INFECTIOUS CAUSES

#### Equine herpesvirus-1 (EHV-1)

Peter Timoney, MVB, PhD, FRCVS, is the Frederick Van Lennep Chair in Equine Veterinary Science at UK and a designated world expert on equine rhinopneumonitis and equine viral arteritis for the World Organization for Animal Health. He says the most important cause of abortion in mares in the U.S. is EHV-1, or equine rhinopneumonitis.

"The virus is ubiquitous in domesticated equid populations worldwide," says Timoney, adding that up to 60% of adult

horses become lifelong latent carriers. Regardless of whether that carrier is a mare, the latent virus has the potential at any point to reactivate and replicate in the bloodstream. When that happens, says Timoney, the horse can shed the virus into the nasopharynx for 36 to 48 hours and potentially transmit it to pregnant mares.

Because of this, mares should be vaccinated at five, seven, and nine months of gestation. Patricia Sertich, VMD, Dipl. ACT, MS, associate professor-clinician educator at the University of Pennsylvania's School of Veterinary Medicine, in Kennett Square, cautions that even though the vaccine helps reduce outbreak incidence and severity, it is not 100% protective.

"The reason for that is not that the vaccine is not good," she says. "It's just that the virus itself doesn't cause a good immune response in the mare, and so we have to administer the vaccines repeatedly and frequently in gestation."

Timoney says mares can be exposed to and contract the virus at any time during pregnancy. However, most EHV-1-related abortions occur from seven months of gestation onward. After it gets in the bloodstream (viremia), the virus sets up shop in the placenta and can cause major damage to the placental vasculature, resulting in thromboembolic lesions (when a blood clot blocks a vessel). This impairs the placental blood supply and can lead to the placenta separating from the uterus and expulsion of the foal. Depending on the severity of the damage, the virus

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Understanding the cause of an abortion can help breeders and veterinarians manage the mare going forward for future successful pregnancies.

## AGENTS OF ABORTION

might not have time to infect the fetus. In such instances, only the placental tissues will test positive upon necropsy.

In other instances in which the mare is exposed to the virus late in pregnancy, she might not abort. However, because the virus can cross the placenta the mare will give birth to an EHV-1-infected foal. Timoney says such foals suffer from interstitial viral pneumonitis (lung inflammation) that is progressive and usually causes the foal's death within the first few days of life.

"There is nothing you can do," says Timoney. "You can treat it symptomatically, but you will not reverse the pathogenesis of the disease (the manner in which it develops). Such foals are profuse shedders of this virus in their nasal secretions, and if those foals happen to be in close proximity to other foals, other pregnant mares, or, indeed, if the personnel handling and managing these foals are not careful with respect to precautions they take, there is significant risk of spread or transmission of the virus."

### Equine herpesvirus-4 (EHV-4)

This pathogen is most commonly associated with respiratory illness in young foals at or shortly after weaning or in older animals in training. Certain strains can also cause a cell-associated viremia; these can give rise to sporadic or isolated cases of abortion, but not abortion storms, says Timoney.

Mares infected with either EHV-1 or EHV-4 appear normal and never show signs of impending abortion. "There are no short-term or long-term fertility problems associated with being able to breed back to those mares successfully," Timoney says.

"Unless you have a farm where people take the broodmare's temperature every day, you may miss a transient fever and not know the mare had been exposed," adds Sertich.

### Equine viral arteritis (EVA)

Horses with this systemic illness might show respiratory signs; swelling in the legs, especially the hind limbs; swelling above and around the eyes; and possible tearing from one or both eyes. Unfortunately, the mare might not display any signs of illness other than a transient fever before she aborts.

While most EHV-1-infected mares tend

to abort at seven months of gestation or later, says Timoney, equine arteritis virus-infected mares can abort as early as two months of gestation right through to term. Some mares infected in late pregnancy can carry to term and give birth to an infected foal that dies within 48 to 96 hours.

"If you have a foal that is born diseased, the kindest, most humane, most appropriate thing to do is to euthanize that foal because it will not survive, and the longer you leave it alive, the greater the risk it may transmit the virus to other animals that are susceptible on the premises," says Timoney.

A vaccine against EVA is available and primarily targeted at breeding stallions, but veterinarians also recommend it for at-risk broodmares. For instance, vaccinate mares at least three weeks prior to breeding them to stallions known to shed equine arteritis virus in their semen, and isolate them from other pregnant mares for three weeks after breeding to prevent spreading virus, says Sertich.

"Even though they themselves aren't going to get sick, they could be a source of virus for ... unvaccinated pregnant mares that subsequently abort," she adds.

It is also proper protocol to keep EVA-shedding stallions as far from pregnant mares and the foaling barn as possible.

Above all, plan ahead, vaccinating, along with keeping potential sources of infection in mind when selecting turnout pastures and handling chores on your farm. "You usually have abortion storms if it is a farm that has not done anything to protect its animals," says Sertich.

### Ascending placentitis

This placental infection is the most common cause of bacterial abortion, with *Streptococcus zooepidemicus* and *Escherichia coli* as the usual culprits. When bacteria from the environment gain access to the uterus through the vulva and cervix, an inflammatory response occurs in the uterus. This causes it to contract and the mare to subsequently abort, says Karen Wolfsdorf, DVM, Dipl. ACT, a field veterinarian and specialist at the McGee Fertility Center at Hagyard Equine Medical Institute, in Lexington, Kentucky.

Sertich says three barriers—the vulva and its underlying musculature, the vestibular vaginal fold, and the cervix—help prevent bacterial infections, unless the mare has poor reproductive conformation in the first place, or a lack of competency in any area because of a previous difficult delivery that stretched the tissues or



COURTESY DR. STEFANIA BUCCA

**Ascending placentitis involving cervical pole and body of the placenta, showing thickening of the allantochorion, loss of chorial villi and presence of exudate.**

caused irreparable trauma.

If the mare is thin, her perineal body conformation will be poor, and her vulva will be prone to aspirating air, debris, and fecal material into the vagina, which creates a bacterial infection that can slowly work its way through the cervix and into the placenta and, eventually, the fetus, says Sertich. Mares with poor perineal conformation benefit from a Caslick's procedure (suturing the upper part of the vulva until the opening is below the brim of the pelvis).

Veterinarians should monitor mares at risk for ascending placentitis monthly and treat them with antibiotics and anti-inflammatories if necessary, says Sertich. Any mare that has a Caslick's operation must have the sutures removed prior to foaling so delivery doesn't damage the vulva. (The same goes for breeding.)

Early mammary gland development or lactation can be the only sign of impending abortion due to any type of placentitis, although ascending placentitis can be identified by a vulvar discharge, says Wolfsdorf.

**AGENTS OF ABORTION**

**Nocardioform placentitis**

This type of placentitis, caused by *Nocardia* spp, *Rhodococcus rubropertinctus*, *Amycolatopsis* spp, and *Crossiella equi*, is a mucoid (resembling mucus) placentitis that affects the uterine body or horns. Researchers don't yet know exactly how the bacteria are transmitted.

Wolfsdorf says nocardioform placentitis causes a loss of placental microvilli (fingerlike projections), accompanied by a brown mucoid exudate (secretion). This causes the placenta to separate from the uterine wall, affecting the foal's ability to acquire the nutrients or oxygen needed for growth.

"A lot of times the mare aborts when the size of the lesion (the resulting damaged tissue) gets so large that the foal can't

survive in that environment anymore," says Wolfsdorf. "And sometimes it isn't large at all and you won't notice that a mare has it unless you actually look at the placenta post-foaling. Then there may be just a tiny spot and, in these cases, they'll have normal, healthy foals."

Nocardioform placentitis can also result in stillbirth or a weak neonate. "In many cases, the fetus itself is not infected, but the fetal membranes are, and it gets to be a race between the progression of the infection and the fetus being mature enough to be born," says Sertich.

Wolfsdorf cautions that the longer you treat an affected mare during gestation, the less likely she is to deliver a live foal.

**Hematogenous placentitis**

With this type of placentitis, you'll see no impending signs of trouble until the mare aborts, says Wolfsdorf.

In these cases bacteria or viruses such as leptospire, herpesviruses, or *Salmonella* enter the mare's bloodstream, causing a systemic infection. Abortion can result, depending on the stage of gestation and the severity of the resulting disease.

Leptospirosis, in particular, can cause sporadic mid- to late-term abortions. It is seen more frequently during rainy years between October and February, says Timoney. A vaccine is available for at-risk horses that's safe for pregnant mares in their second trimester.

**Mycotic placentitis**

While less common, fungal infections can also lead to abortion when organisms such as *Aspergillus* spp access the placenta via the cervix or the respiratory tract by way of the bloodstream. Lesions can occur on the placenta and the fetus, causing the chorionic surface (the highly vascular outer fetal membrane) to become dry, thick, and leathery.

Wolfsdorf recommends monitoring pregnant mares that have had any form of placentitis closely, with monthly transrectal and, if necessary, transabdominal ultrasounds starting at six to seven months of gestation.

The veterinarian can also run serum hormonal assays to evaluate progesterone and estrogen levels, which can potentially help identify impending problems and prompt early treatment.

**NONINFECTIOUS CAUSES**

**Twinning**

Sertich says twinning is the most common noninfectious cause of abortion. It's important to check bred mares 14 to 17 days postovulation for pregnancy and signs of twins. If the veterinarian detects twins, he or she can manually reduce one fetus before it lodges at the base of the uterine horn.

If twins are allowed to grow, usually one dies. "There is not enough surface area for the chorion of both fetuses to have adequate connection (with the uterus) to provide the gas exchange and the nutrients needed to nourish both fetuses," says Sertich. "So they just simply run out of provisions, and if the amount of surface area that the two fetuses have is unequal, the smaller one usually is the one that dies first. Then the one with the larger surface area connection will persist longer, and it is a race between having enough time and space for that fetus to grow long enough to become mature."

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**AGENTS OF ABORTION**

**Umbilical cord torsion**

If an umbilical cord becomes twisted to the point it cuts off blood supply from the placenta, the fetus will die and be aborted. The exact cause is not known but torsion has been shown to be associated with a fetus that has an excessively long cord.

**Mare reproductive loss syndrome**

Breeders in Kentucky and surrounding states first recognized this condition in 2001, when an explosive outbreak of early and late gestation abortions occurred. These devastating losses corresponded with an unusually heavy infestation of Eastern tent caterpillars.

Researchers found that horses were inadvertently ingesting the caterpillars when they grazed. The insects' barbed hairs, called setae, penetrated the gastrointestinal tract and allowed bacteria to pass from the intestines into the bloodstream, which then resulted in placental infection and rapid abortion. Eradication of Eastern tent caterpillars on farms has mostly eliminated the problem, although cases do still occur occasionally, particularly in years with bumper crops of caterpillars.

**Fescue toxicosis**

If pregnant mares are allowed to eat fescue infected by the endophyte *Neotyphodium coenophialum* as pasture, hay, or bedding, then prolonged gestation, agalactia (a lack of lactation), thickened placenta, premature placental separation, abortion, stillbirth, dystocia (difficult birth), and/or the birth of a weak foal can occur. Owners can prevent abortion by removing mares from infected tall fescue fields at least 60 to 90 days before foaling.

**Developmental abnormalities**

One development-related cause of abortion, says Sertich, is a uterine body pregnancy. This occurs when the fetus does not grow in the uterine horn as it should but, rather, down in the uterine body. This often results in a transverse presentation (the foal is sideways in the mare's body, with either its back or its limbs pointing toward the mare's rear) and dystocia.

**Medications**

Sertich says abortions due to pharmaceuticals are uncommon, but the veterinarian needs to make sure a mare is not pregnant if administering prostaglandins (used to manipulate estrous cycles), oxytocin (a hormone used to contract the uterus and induce labor), or high or repeated doses of steroids or corticosteroids.

**In Summary**

"If the worst happens, and your mare aborts, it's important to have your veterinarian culture her uterus, acquire serum for *Leptospirosis* spp (testing), necropsy the foal, and perform histopathology (microscopic exam) on fetal and placental tissues to help identify the cause," says Wolfsdorf.

Sertich echoes the importance of having a necropsy performed: "Even if it is twins you should still have the necropsy, because sometimes there may be an infectious component, and it is critical to know whether or not that abortion was due to equine herpesvirus or equine arteritis virus. If it is a viral abortion, you can take steps to protect the rest of your pregnant mare herd.

"Always submit the fetal membranes for evaluation as part of a necropsy. The fetus is not enough," she adds, because cord torsion, ascending placentitis, hematogenous placentitis, fungal placentitis, and twins are all evident in the fetal membranes.

Understanding the cause of an abortion can help breeders and vets manage the mare going forward for future successful pregnancies. **UK**

>Sarah Evers Conrad is a freelance writer for *The Horse*.

## Abortions in Kentucky Broodmares: Incidence and Causes

The loss of a developing fetus during pregnancy can be a frustrating, emotional, and costly experience for horse owners, farm workers, veterinarians, and the public. A thorough evaluation of the aborted fetoplacental unit (the fetus and placenta) by a veterinary pathologist can help determine the cause of abortion; identify new, unusual, or foreign causes of fetal loss; rule out infectious agent involvement; and aid in the epidemiologic monitoring of abortifacients (factors that can result in abortion).

A two-year review of equine abortions, from the 2016 and 2017 breeding seasons, was conducted at the UK Veterinary Diagnostic Laboratory (VDL) to evaluate current abortion trends.

Dates listed below indicate data for the respective breeding season, not calendar year. A total of 898 cases of equine abortion, 570 from 2016 and 328 from 2017, were evaluated.

The majority of cases were considered sporadic and unrelated, except for one equine herpesvirus-1 abortion storm identified during the 2016 breeding season. Abortions during early gestation began in May of the 2016 breeding season and June of 2017 breeding season. The highest number of abortions occurred



The loss of a developing fetus can be a frustrating, emotional, and costly experience for horse owners, farm workers, and veterinarians alike.

in March of both years, and the last abortions occurred in July of 2017 (2016 breeding season) and May of 2018 (2017 breeding season). Abortions were categorized into infectious (2016 = 55% and 2017 = 38%) and noninfectious causes (2016 = 45% and 2017 = 62%).

**ABORTION IN KENTUCKY BROODMARES**

Infectious causes of fetal death were attributed to bacterial, viral, fungal, and unidentified (presumably bacterial) agents that resulted in placentitis (inflammation of the placenta) and/or systemic infections. Placentitis was the most common cause of infectious disease and was identified in 280 cases (24.6%) in 2016 and 102 cases (20.2%) in 2017. Approximately 5% of abortions each year were attributed to ascending placental infections through the mare's cervix by bacteria such as *Streptococcus zooepidemicus* and *Escherichia coli*. Nocardioform/mucoid placentitis was diagnosed in 145 (12.7%) and 27 (5.3%) cases during 2016 and 2017, respectfully. Three cases of mycotic pla-

**Abortion of undetermined cause occurs quite regularly and is frustrating to both clients and diagnosticians.**

centitis were diagnosed in 2016, and one case was diagnosed in 2017. Placentitis due to unidentified agents occurred in 79 (6.9%) cases in 2016 and 47 (9.3%) cases during 2017. Agents were not identified, presumably, due to the use of antimicro-

bial therapy, chronic resolved infections, or overgrowth by environmental organisms. Leptospiral abortion or perinatal death was identified in five cases (0.4%) during 2016 and 11 cases (2.2%) in 2017. Abortion due to fetal bacterial septicemia or pneumonia was diagnosed in 4.4% of cases in 2016 and 1.6% of cases in 2017. Equine herpesvirus-1 was the only viral agent identified in fetuses over the two-year period, and it was responsible for 16 (1.4%) abortions or perinatal deaths in the 2016 breeding season and 10 (2.0%) in the 2017 breeding season.

Noninfectious causes of abortion are considered sporadic events. They included abortion associated with umbilical cord torsion (2016 = 3.9% and 2017 = 7.9%), fetal stress (2016 = 1.8% and 2017 = 2.0%), placental "cervical pole" necrosis (2016 = 0.5% and 2017 = 0.4%), twin pregnancy (2016 = 0% and 2017 = 0.6%), miscellaneous causes (hydrops, tissue necrosis of unknown etiology, and maternal stress and disease; 2016 = 1.2% and 2017 = 2.0%), and abortion of undetermined cause (2016 = 14.9% and 2017 = 27.5%).

Abortion of undetermined cause occurs quite regularly and is frustrating to both clients and diagnosticians. Based on the human and veterinary literature, many of these occur due to physiologic abnormalities (e.g., fetal cardiovascular disease, hypoxia), stress and disease in the pregnant mare, autoimmune disorders, genetic irregularities, environmental exposures, and endocrine abnormalities; all of which cannot be easily assessed or tested for in the aborted fetoplacental units. A diagnosis of abortion of undetermined etiology isn't completely without value, because infectious diseases and other possible causes of abortion storms can be readily ruled out.

In conclusion, equine abortion remains a common issue. Both infectious and noninfectious causes are frequently responsible. Evaluation of the aborted fetoplacental unit by your local veterinary diagnostic laboratory can aid in determining the cause of abortion, help to monitor and track known abortifacients, and identify new and possibly emerging causes of abortion.

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

**GRAD STUDENT SPOTLIGHT**

**SHELLEY TURNER, MS**

**From: St. Louis, Missouri**

**Degrees and institutions where received:**

**BS in biology, Stephens College, Columbia, Missouri**

**MS in animal nutrition, University of Missouri, Columbia.**



Coming to the UK Gluck Equine Research Center was a dream come true for Shelley Turner, MS. She's spent the past eight years working in the production animal feed industry and has wanted to pursue a doctorate for some time.

"Being a horse crazy individual, I have always wanted to come to UK to pursue further education," Turner said. "To be able to do so at the prestigious Gluck Equine Research Center is the culmination of that."

Turner is currently under the direction of Amanda Adams, PhD, an associate research professor at the Gluck Center, and is working with industrial hempseed to determine what effects these products have on equine health with a focus on immune function. First, they want to understand the pharmacokinetics of industrial hempseed products in the horse.

"We will then focus on understanding what anti-inflammatory properties hempseed may have in the horse, as well as on joint mobility and lameness," Turner said. "In addition, we are interested in understanding what effects hempseed products may have on the stress response in the horse."

Turner said her most valuable takeaway from the program is the ability to conduct innovative research while also working together with fellow labmates to learn about their research.

"It's all a collaborative teamwork and learning experience that is invaluable to the process," she said.

Turner plans to graduate in 2022. Whether she ends up conducting postdoctoral research, teaching, or going into the industry, she said she hopes to continue to help advance equine health and wellness. **UK**

>Alexandra Harper, MBA, is the operations and communications coordinator for the UK Ag Equine Programs

## COMMENTARY The Importance of Identifying the Cause of Equine Abortions

Late-term abortion is one of the most devastating issues horse breeders face. Every pregnancy represents a labor of love with a substantial amount of time, energy, and money put into achieving the perfect foal. Every pregnancy loss raises questions concerning our ability to have prevented that loss and whether we could have done more.

In this issue, Alan Loynachan, DVM, PhD, addresses the underlying causes of the 898 equine abortions examined at the UKVDL over the 2016 and 2017 breeding seasons. This retrospective look is important to help us identify areas where we can improve management techniques and where we should focus our future research efforts to best benefit horse owners and breeders. As such, it's critical that breeding farms send aborted foals to a veterinary diagnostic laboratory, even if the cause of abortion appears obvious.

Approximately 50% of the abortions evaluated were deemed noninfectious. Of these, most are not likely to be management-related with the exception of twin pregnancies; however, twins did not comprise a large percentage of the abortions submitted. This is likely due to better management techniques, namely identifying and reducing twin pregnancies early in gestation, but also likely reflects the failure of owners to submit abortions with an obvious cause to a diagnostic laboratory. While this is understandable, it also makes it difficult to accurately measure the frequency of these losses.

Infectious abortions comprised the other 50% of submitted abortions, with placentitis representing the majority of these cases. Unfortunately, we know little about what predisposes a mare to develop placentitis, and we still have trouble with early, accurate, and specific diagnosis. Even so, there are steps that owners can

take to aid in early diagnosis, including endocrine monitoring; regular ultrasound evaluation of the placenta; and daily checks for premature mammary gland development, premature lactation, and purulent (pus) vulvar discharge. If anything out of the ordinary is noted, a veterinarian should be called to examine the mare and start treatment if indicated.

As placentitis comprises the majority of the infectious abortions seen, the laboratory of Barry Ball, DVM, PhD, Dipl. ACT, at the UK Gluck Equine Research Center has been focusing on better understanding the causes and progression of placentitis. By utilizing state-of-the-art techniques to look at changing gene expression, we have identified several potential targets which we believe will function as diagnostic aids and/or treatment options. Although more work is still needed to confirm our findings, we are optimistic that better options for dealing with placentitis will be available soon.

Again, I cannot stress enough the importance of sending all aborted foals, including fetal membranes and maternal serum, to a veterinary diagnostic laboratory. When breeders fail to submit abortions, it becomes more difficult to spot trends and, in turn, becomes more difficult to identify and respond to emerging threats. It's easy to justify only submitting abortions without an obvious cause; however, the overall health of the equine breeding industry relies on the submission of every abortion, every time.

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

## UK Celebrates 27 Years of Partnership With Lloyd's of London

Lloyd's of London and the UK College of Agriculture, Food and Environment celebrated more than a quarter-century partnership in support of the horse industry. Representatives of Lloyd's recently presented a \$50,000 check to UK for continued funding of the international publication, *Equine Disease Quarterly*.

"We are very pleased to be associated with the *Quarterly*, an acknowledged source of very valuable information on issues of direct concern to equine stakeholders worldwide whether in performance, breeding or recreational sectors of the industry," said Patrick Talley, U.S. Central regional director for Lloyd's America. "I am especially proud of the long-standing nature of the support Lloyd's has provided and the commitment of Lloyd's to ensuring the dissemination of up-to-date information



Pat Talley (center right), U.S. Central regional director for Lloyd's America, presents David Horohov, PhD (center left), chair of the UK Department of Veterinary Science, with a check on behalf of Underwriters at Lloyd's, London, to support publication of the *Equine Disease Quarterly* from the UK College of Agriculture, Food and Environment. Also pictured are Peter Timoney, MVB, MS, PhD, FRCVS (left), of the UK Department of Veterinary Science, and Bill Wallace (right), VP of administration and finance for Lloyd's America.

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on matters of equine health and welfare of value to equine industries around the world.”

David Ashby, managing director and principal bloodstock underwriter with Amlin and chair of Lloyd’s Livestock Committee, added, “Lloyd’s of London insures much of the world’s most valuable bloodstock, and we are delighted to support the University of Kentucky and this publication, that enhances knowledge and horse welfare within the United States and worldwide.”

*Equine Disease Quarterly* is a joint

publication of UK’s Department of Veterinary Science, the Veterinary Diagnostic Laboratory, and the Maxwell H. Gluck Equine Research Center.

“The College of Agriculture, Food and Environment is very grateful to Lloyd’s of London for its long-standing support of the Veterinary Science Department since 1985 and of the Lloyd’s *Equine Disease Quarterly* for 27 years,” said Dean Nancy Cox, MS, PhD. “Thanks to Lloyd’s support, this publication has achieved iconic status across the international equine industry for which we are deeply grateful.”

The award-winning publication provides timely and authoritative reports on some of the most important issues

facing the equine industry. The *Quarterly* reaches more than 14,500 readers in 100 countries. Available in digital and print format, its articles regularly are reprinted in scientific and lay equine publications.

Lloyd’s *Equine Disease Quarterly* is available to subscribers at no charge. Alan Loynachan, DVM, PhD, and Peter Timoney, MVB, MS, PhD, FRCVS, of the UK Department of Veterinary Science are co-editors. Recent issues are available online at [gluck.ca.uky.edu/equine-disease-quarterly](http://gluck.ca.uky.edu/equine-disease-quarterly). **UK**

>Aimee Nielsen is an agricultural communications specialist within UK’s College of Agriculture, Food and Environment.

## UK Extension Agents to Host 12th Pastures Please!! Workshop

The UK Ag Equine Programs will host a Pastures Please!! pasture maintenance workshop on Jan. 28 from 5:30 to 8 p.m. EST at the Mercer County Fairgrounds, The Stable, 560 Linden Ave., in Harrodsburg, Kentucky.

The event is free, and snacks will be provided prior to the event through sponsorship from McCauley’s and Thoroughbred Landscape Products.

Horse owners and farm owners and managers will have the opportunity to listen to several informative talks from forage experts, including how to manage weedy grasses in grazed pastures; safe tall fescue varieties for all classes of horses; and using seed coating and other techniques to improve pasture establishment.

“Given the weather challenges and damage to our pastures from 2018, this is the perfect time to attend a meeting and begin thinking about what will be necessary to repair pastures and restore productivity as we look forward to spring pasture growth,” said Linda McClanahan, Mercer County agriculture and natural resources extension agent.

Interested parties should RSVP to their local county agent or to the Mercer County Extension office at 859/734-4378 or [dl\\_CES\\_Mercer@email.uky.edu](mailto:dl_CES_Mercer@email.uky.edu). For more information about this or other UK Ag Equine Programs events, visit [equine.ca.uky.edu](http://equine.ca.uky.edu). **UK**

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



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## Attend the 38th Kentucky Alfalfa and Stored Forages Conference

**Practical Considerations for Producing High-Quality Hay and Baleage**

**When:** Thursday, Feb. 21, 8 a.m. - 3 p.m.

**Where:** Fayette County Extension Office, 1140 Harry Sykes Way, Lexington

**Cost:** Early registration is \$25 (includes the program, silent auction, awards, and lunch). Renew your Kentucky Forage and Grassland Council membership for \$15 more. Sponsorship opportunities are available for \$250.

**Presentation topics:**

- Economics of Hay Production
- Hay Prices and Trends
- Update on Hay Marking Equipment and Technology
- Barn Considerations for Cash Hay Operations
- Evolution of Mechanization and Transportation in My Hay Operation
- Producer Panel: Baleage—How it Works on My Farm
- How Good is our Kentucky Haylage? A Summary of Farm Results

CCA credits have been requested.

Find more information on the **UK Forage Extension page**. Register at [Eventbrite.com](https://www.eventbrite.com).