



EVA Vaccines: What You Need to Know



ANNE M. EBERHARDT

Nearly 100% of Thoroughbred stallions in Kentucky are now vaccinated against EVA.

Some equine diseases come and go with little impact on the horse industry. Others affect only local or state industries when they rear their ugly heads. But when a disease has the potential to shutter the global horse breeding industry, controlling it becomes crucial. One of those diseases is equine viral arteritis (EVA). Fortunately, veterinarians have vaccines against this disease at their disposal to help control its spread.

At the equine arteritis virus (EAV) symposium hosted by the University of Kentucky's Gluck Equine Research Center, Peter J. Timoney, FRCVS, PhD, reviewed EVA vaccines and the current vaccination recommendations. Timoney is a professor and former department chair and director of the Gluck Center.

Why Horses Need Protection

Before deciding whether to vaccinate against a disease, it's important to understand how that disease impacts affected animals and how it could impact breeding industries around the globe.

So Timoney began with a review.

Equine viral arteritis is a contagious viral disease (caused by the equine arteritis virus, or EAV) that can cause fever, respiratory illness, ocular inflammation, edema (swelling, especially of the limbs), birth of weak or sick foals, and abortion. Not all affected horses show clinical signs, and when they do, signs can be subtle. It is mainly transmitted via semen through natural cover or artificial insemination and can also be spread via the respiratory route.

Adult horses usually make full clinical recoveries with or without supportive treatment such as non-steroidal anti-inflammatories (NSAIDs) and antibiotics.

However, if the virus isn't cleared from a stallion's body within a few weeks he runs the risk of becoming a carrier, meaning he won't show clinical signs of disease, but he's still capable of shedding—and spreading—the virus. Persistently infected carrier stallions function as EAV's natural reservoir, and they disseminate the virus to

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susceptible mares at breeding at a rate of 85-100%. Such an outbreak could devastate breeding industries—local, national, and global. Once a stallion is a carrier, rendering him EVA-negative can be a serious challenge. Because EVA relies on testosterone to persist, some carriers are gelded to eliminate the virus.

Scientists first isolated the virus and characterized it as a disease agent in 1957, but it wasn't until 1984 that the first case was recorded in a Thoroughbred horse in Kentucky, Timoney explained. The disease spread rapidly across Kentucky breeding farms, and authorities worldwide took notice.

From this outbreak, Timoney said, several industry concerns arose, including:

- The risk of disease spread through the international movement of horses and/or semen;
- The potential for major outbreaks in populations of naive mares;
- The risk of illness and death in young foals; and

EVA Vaccines

■ Stallions becoming carriers.

International movement regulations and testing requirements quickly took effect after the 1984 outbreak.

"To this day, EVA remains one of the most internationally regulated equine diseases," Timoney said.

Current prevention and control programs are primarily focused on restricting EAV spread to both minimize the risk of virus-related abortions and to prevent stallions from becoming carriers, he said. And one of the main ways to control EAV spread is via vaccination.

Current Vaccines

Timoney said the two vaccines available to today's breeders (Arvac and Artervac, both produced by Zoetis) are based on research conducted in the 1960s, but are both safe and effective for reducing the risk of EVA.

Arvac is a modified-live virus vaccine (one that includes a weakened virus that no longer produces clinical disease, but retains the ability to induce a protective immune response) that's been used in the United States and Canada since 1985; it's also been used on a limited scale in New Zealand, he said. It's been confirmed safe for use

in all horses except for mares in the final two months of gestation and in foals less than six weeks of age, Timoney said. Adverse vaccine reactions are uncommon.

Regarding efficacy, Timoney said, Arvac "stimulates effective protection against clinical disease and establishment of the carrier state in stallions." Further, vaccinated stallions and their semen can be exported to other countries including Japan, which will only accept stallions vaccinated against EVA.

Artervac is an inactivated vaccine (it does not contain viable or infectious virus, but still stimulates an immune response) licensed for use in a number of European countries; it is not commercially available in North America. This vaccine has also been proven safe and "reputedly effective" for use in stallions and mares, Timoney said.

Vaccination & Management Recommendations

"Vaccination is primarily targeted at protecting breeding stallions against establishment of the carrier state," Timoney said. He recommended annual vaccination for noncarrier stallions three to four weeks before the breeding season, and many breeders and veterinarians are following that advice: According to statistics from

Kentucky Department of Agriculture Equine Programs manager E.S. "Rusty" Ford, nearly 100% of stallions in the commonwealth are vaccinated against EVA.

Timoney noted that mandatory vaccination only applies to Thoroughbred stallions and only in the states of Kentucky and New York.

Timoney also recommended vaccinating immature colts (6 to 12 months old) to minimize the risk that they'll become carriers later in life.

He said that while vaccination protocols are primarily targeted at protecting stallions from becoming carriers rather than preventing abortion in mares prophylactically, mares should still be vaccinated in some situations.

"Vaccination of pregnant mares is strongly indicated in the face of high risk of exposure to natural EAV infection," even if they're in late gestation, he said.

Timoney also provided several other recommendations for controlling EVA:

- Identify carriers, separate them from other breeding stallions, and restrict their matings to mares that have been vaccinated against EVA or are naturally seropositive (having antibodies against EAV in their blood serum);
- If a naive mare is bred to a stallion shedding EAV,

isolate her from seronegative horses for three weeks to prevent virus spread;

- If using artificial insemination, screen semen prior to breeding; if the semen tests positive for EAV, only use it in mares that have been vaccinated against EVA or are naturally seropositive;
- Employ sound management and biosecurity practices for broodmares; and
- If breeding stock resides on a facility that sees horses coming and going with limited isolation space, it's highly recommended to vaccinate all at-risk equids. He also directed attendees to the [USDA Animal and Plant Health Inspection Service's](#) resources on managing and controlling EVA and rules and regulations associated with the disease.

Take-Home Message

When it comes to EVA, many horse owners and veterinarians worldwide have a similar goal: minimize disease spread. One of the most important steps in achieving that goal is to implement a proper vaccination regimen for breeding stock. Consult your veterinarian to determine when it's appropriate to vaccinate your stallions and broodmares against EVA. **UK**

>Erica Larson is the news editor for *The Horse* and TheHorse.com.

EVA: A European Perspective

An infectious equine disease is bad news no matter what language you speak or which country you call home. But between countries, regulatory bodies, and animal health professionals, there often remains a difference in perspective when it comes to handling these diseases.

At the equine arteritis virus (EAV) symposium hosted by the Gluck Equine Research Center, Richard Newton, BVSc, MSc, PhD, FRCVS, Head of



ISTOCK.COM

In Europe, EVA is most prevalent in Warmbloods and Standardbreds.

Epidemiology and Disease Surveillance at The Animal Health Trust, in Newmarket, England, provided a European perspective on one potentially dangerous

venereal disease: equine viral arteritis (EVA).

What is EVA?

Newton explained that EVA is a viral disease first identified in the 1950s in the United States during the "pioneering heyday of virology." The first case wasn't identified in the United Kingdom until March 1993, after mares were bred to a recently imported stallion shedding the virus. The stallion had been falsely certified as negative for the virus prior to import.

Today the infection is found nearly

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worldwide—although New Zealand officials recently announced that the country has become EVA-free, Newton said—and is prevalent in most European countries. Although previous outbreaks have occurred in Thoroughbreds, the infection is currently much more prevalent in Warmbloods and Standardbreds, said Newton.

Horses can spread the disease efficiently via semen or somewhat less efficiently via respiratory secretions. Adult horses usually make full clinical recoveries with or without supportive treatment such as non-steroidal anti-inflammatories (NSAIDs) and antibiotics. Clinical signs are variable and often absent and include:

- Fever;
- Depression;
- Conjunctivitis (inflammation of the conjunctiva lining the inner eyelids);
- Edema (fluid swelling)
- Skin rashes; and
- Abortion in pregnant mares.

Affected horses that don't show clinical signs still shed the virus, Newton said. If the virus isn't cleared from a stallion's body within a few weeks, he runs the risk of becoming a carrier. Persistently infected carrier stallions function as natural reservoirs of EAV, and they disseminate the virus to susceptible mares at breeding.

Newton stressed that virus shedding is testosterone-dependent, so immature colts won't become carriers, and castration can stop carriers from shedding the virus.

Control Measures in the U.K.

In the United States EVA is not a reportable disease, and there are no codes of practice to limit its spread. The American Association of Equine Practitioners has, however, issued guidelines for EVA prevention, and import regulations are aimed at preventing a foreign horse from bringing EVA into the country.

Newton said organizations in Europe have taken steps to limit EVA spread, including the following regulations:

The EVA Order In 1995 the U.K. government passed The EVA Order, making the condition a notifiable disease in stallions if:

- A stallion is unexpectedly found to be seropositive (having antibodies against EAV in his blood serum);
- The virus is detected in a semen sample; or

MASTHEAD

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■ The Horse: Your Guide to Equine Health Care

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- Disease is identified in mares within 14 days of live cover or artificial insemination.

Under the Order, the U.K.'s Department for Environment, Food, and Rural Affairs can report publically when stallions test positive, he added.

The Order states that stallions can be declared EVA-free following:

- Castration;
- A negative virus isolation test on semen; or
- Test mating two mares at the owner's expense; however, Newton said the British government does not favor this method.

HBLB Codes of Practice Each year Britain's Horserace Betting Levy Board (HBLB) issues Codes of Practice for dealing with a number of equine infectious diseases, including EVA. The document encourages veterinarians and owners to:

- Blood test stallions annually after January 1;
- Vaccinate stallions against the disease at six-month intervals;
- Blood test mares annually after January 1 and within 28 days before breeding; and
- Blood test imported animals within 28

days of import and while the horses are still in their 21-day quarantine.

Newton also noted that, although Thoroughbreds cannot be produced via artificial insemination and embryo transfer under internationally agreed rules governing breed registration, the HBLB Codes of Practice does include information on preventing EVA in such scenarios.

BEVA Guide to the Use of Artificial Insemination in Horse Breeding The British Equine Veterinary Association (BEVA) has also issued guidelines on preventing EVA spread when using artificial insemination. These guidelines recommend blood tests prior to purchase or import to ensure the horse is EVA-negative.

They also recommend using semen that's been declared EVA-free and that importers retest semen once it's arrived in the U.K. if there are any doubts regarding its status.

Additionally, Newton said, the guidelines include recommendations for managing seropositive competition stallions, which often travel to different countries on a regular basis. The guidelines recommend isolating the affected stallion

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for 21 days, blood testing the horse after at least 14 days in quarantine, and repeating the isolation and tests each time the horse leaves the U.K.

EC Directives Newton also reviewed the directives set forth by the European Commission (EC), which cover the international transport of semen and stallions from non-European Union (EU) countries.

The directives state that semen must come from stallions that are certified clinically disease-free and were held for 30 days on an EVA-free premises prior to collection, and the stallion's semen must have tested negative for EVA.

Additionally, stallions being imported into the EU from non-EU countries must be seronegative for EVA or test negative prior to vaccination, if vaccinated.

Risks Remain

Newton cautioned that the EC directives deal well with semen trade between EU member states, but noted that no regulations exist regarding stallion movement between EU member states. This, he said, means that individuals and each nation's horse industry must protect itself against EVA and, therefore, rely on other individuals' good practices.

This poses another challenge, said Newton, such as the varying attitudes regarding EVA between the U.K. and some other European countries, and between the Thoroughbred sector and other

breeds. While some breeders exercise extreme caution when shipping semen or stallions, he said others don't consider it a problem and continue to ship EVA-positive or carrier stallions or semen, sometimes with directions to vaccinate mares prior to breeding.

As a result, it's often up to individual horse owners to employ good practices and protect their own horses. Newton offered a recommendation he first presented in a study that was published in the UK's *Veterinary Record* in 1999 following the 1993 U.K. EVA outbreak, noting it "stands true today as much as it did last century":

"As there have been no statutory requirements since 1993 to demonstrate that stallions moving between EU countries are free of EAV, these results highlight the potential risks posed to the largely susceptible U.K. horse population by the importation from within the EU of stallions which are shedding the virus. In the absence of such statutory import requirements, the authors recommend that all potential purchasers of stallions from other EU states should establish the EVA serological status of these animals before they are purchased and imported into the U.K."

Vaccination

Newton also touched briefly on the available EVA vaccines and their issues.

He said one concern is that in the U.K. the only product available is an inactivated, whole-virus vaccine; conversely, in the United States, the only available

vaccine is a modified-live vaccine. Inactivated, whole-virus vaccines might not always induce an immune response, and the response might not be long-lived, meaning horses might require more frequent boosters to maintain adequate protection. So, it's not surprising that study results have shown that first-season sires are often poorly protected against EVA without more frequent boosters, Newton said.

Additionally, he said, there are occasional supply issues. For instance, a 2003 outbreak in Ireland coincided with a diminished vaccine supply.

A better understanding of ideal vaccination protocols and improved supplies could help better protect horses against EVA, he said.

Take-Home Message

Newton left attendees with three important points to remember about EVA in Europe: Unrestricted stallion movement within the EU continues to pose a risk to the European horse industry; there's a great need to improve owners' and veterinarians' compliance with voluntary disease control measures such as those outlined in the HBLB's Codes of Practice; and the veterinary industry is in need of better ways to monitor and improve laboratory testing, vaccination protocols, and vaccines. Improvements on these fronts can help reduce the spread of this costly and dangerous disease. **UK**

>Erica Larson is the news editor for *The Horse* and TheHorse.com.

Should I Deworm My Horse in the Winter?

Q Is it worthwhile to deworm my horses during the winter? I've heard that internal parasites aren't around this time of year.

HEATHER, VIA E-MAIL

A Yes, you are correct that we recommend deworming horses during the active grazing season rather than during the winter. The reason is that the small strongyles tend to arrest their development over the winter at the larval stage. Most of the available dewormers have no effect against these arrested larvae, and the few that do are only partially effective.

The arrested development can lead to an accumulation of small strongyle larvae in the mucosal walls of the large intestine. If a large number of these larvae are present in a horse, deworming it at this time might actually cause more harm than good. Most dewormers mainly act on the adult parasites present in the lumen of the intestine, and removing these may activate the arrested larvae and cause them to mass emerge from their encysted stage. This can lead to serious diarrhea.

There are situations where it can be necessary to deworm a horse

during the winter months, such as if the horse hasn't been dewormed adequately during the latter part of the grazing season. Other examples of winter deworming include foals that harbor ascarid parasites, which aren't seasonal to the same extent as the strongyles. In both cases you should consult with your veterinarian regarding your choice of dewormer.

We find that horses actively shed parasite eggs year-round, but there is a tendency toward lower counts in the off-season months. This makes sense from the parasite's standpoint, as winter conditions do not favor parasite transmission.

So the bottom line is that we don't typically recommend treatments directed at strongyle parasites during the winter months in the colder climates. Remember, though, that in warmer climates (i.e., the southern United States) parasite transmission is more likely to occur during the winter than in the hot summers. Most importantly, make sure your dewormers are working by running fecal exams to determine parasite egg counts before and after treatments. **UK**

>Martin Krarup Nielsen, DVM, PhD, Dipl. EVPC, ACVM, is an equine parasitologist, veterinarian, and assistant professor at the University of Kentucky Gluck Equine Center.

UK Horse Pasture Evaluation Program: 10-Year Review

The University of Kentucky Horse Pasture Evaluation Program has now completed 10 years of work on horse farms in Central Kentucky and across the state. Over this time, the program has grown tremendously and has had a significant impact on the horse industry and the University of Kentucky College of Agriculture, Food and Environment.

The idea of having university experts evaluate commercial and private horse farms' pasture composition began after the 2001/2002 mare reproductive loss syndrome (MRLS) outbreak. During this time of uncertainty, the potential benefits for a partnership between UK and the horse industry were very clear. In 2005 the UK Equine Initiative (now UK Ag Equine Programs) was born. One program that began within the initiative was the UK Horse Pasture Evaluation Program, developed by Ray Smith, PhD, professor and forage extension specialist within UK's plant and soil sciences department, and Tom Keene, hay marketing specialist within the same department.

In its inception year (2005), university experts evaluated 14 farms (representing 1,260 acres) for species composition and sampled for tall fescue endophyte presence and ergovaline concentration. During 2014 they evaluated 17 farms, totaling more than 6,600 acres. Additional services have been added, including ergovaline analysis, GPS mapping of sample locations, and tracking of pasture composition changes over time. While the data collected in this program is valuable, the program does not measure its success based on the numbers, but on the impacts to farms and Kentucky's horse industry.

Since its inception, program experts have visited 111 individual farms in 20 different Kentucky counties, many of which have asked the program to assess their pastures year after year. These contacts have become friends of UK's College of Agriculture, Food and Environment and provide continued support and collaborations when needed. Several of these farms have welcomed on-farm research projects ranging from pasture management to weed control and even horse health. Farms have also supported extension events by attending or hosting events, including the annual winter program "Pastures Please!!" and the annual summer equine field day "Equine Farm and Facilities Expo." In 2015 Pastures Please!! will be held Feb. 5 at the Fayette County Extension Office from 6-8:30 p.m.

The Horse Pasture Evaluation Program encompasses all three facets of the University of Kentucky: research, extension, and teaching. Detailed information from more than 1,500 individual pastures or paddocks has given researchers a large dataset and a great understanding of Kentucky horse pastures. This information is used for everything from on-farm recommendations to guiding extension programs and educational materials.

In addition, the program teaches students. Over the past 10 years, several graduate-level students, including Joy Lowry, Laura Schwer, and current coordinator Krista Lea, have operated the program. Additionally, the program has employed around 20 undergraduate students from Asbury University and the University of Kentucky, with majors ranging from Equine Science and Management to Human Health, Biology, and Mission Outreach. This program's success is due in large part to the hard work and dedication of many students over the years that have taken a summer job and turned it into a learning and teaching experience.

For more information on the UK Horse Pasture Evaluation Program, visit its facebook page at facebook.com/UKHorsePastureEvaluation?ref=hl or contact ukforageextension@uky.edu.



Horse Pasture Evaluation Program



- Soil Maps
- Species Composition
- Tall Fescue Analysis
- Tracking of Pastures
- Specific Recommendations
- Comprehensive Report

The programs goals are to:

- Provide detailed pasture management recommendations to horse farm owners and managers.
- Improve pastureland by increasing forage quality and quantity and reduce the need for stored feeds such as hay and grain.
- Assess the potential risk of fescue toxicity for pregnant broodmares on pasture.
- Program is available to horse farms across the state regardless of farm size, breed or discipline.

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

Finally, this program would not exist without the support and collaboration it has received from UK's College of Agriculture, Food and Environment. Each year departments across campus, including UK Ag Equine Programs, Weed Science, Animal and Food Science, the Gluck Equine Research Center, Regulatory Services, and the Veterinary Diagnostic Laboratory, collaborate. **UK**

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

Emma Adam Receives AAEP Foundation Past Presidents' Research Fellow

University of Kentucky doctoral candidate Emma Adam, BVetMed, MRCVS, Dipl. ACVIM, ACVS, received the 2014 American Association of Equine Practitioners (AAEP) Foundation Past Presidents' Research Fellow for her research into articular cartilage repair of degenerative joint disease, the leading cause of lameness and retirement in all breeds and disciplines of equine athletes.

Adam was recognized Dec. 8 during the Frank J. Milne State-of-the-Art Lecture at the AAEP's 60th Annual Convention, which took place Dec. 6-10 in

Extension Agents to Host 8th Annual Pastures Please!!

University of Kentucky Cooperative Extension Service and UK Ag Equine Programs will host Pastures Please!! at 6 p.m. Feb. 5 at the Fayette County Extension office on Red Mile Road in Lexington. The public is invited to this free annual event, particularly horse owners and farm managers interested in the latest information about horse pasture management.

This year's program will feature topics on stewardship when applying herbicides for weed control, how to "start over" and completely re-establish pastures, and plants that are poisonous to horses.

A few Central Kentucky extension agents launched the annual educational program in 2007 to provide timely and practical information for area horse owners. It has expanded and now includes participation from Bourbon, Clark, Fayette, Jefferson, Jessamine, Scott, and Woodford counties. Each year a different county hosts the event.

Those interested in attending should RSVP to UK at 859/257-2226 or equine@uky.edu.

Salt Lake City, Utah. The \$5,000 grant is awarded annually to a doctoral or residency student who has made significant progress in the field of equine health care research.

Adam's research seeks to enhance understanding of articular chondrocytes' exact gene expression in order to recapitulate them experimentally as therapy cells for articular cartilage lesions. Using RNA-sequencing scrutiny of the genes expressed in cartilage at different stages of development, the goal is to obtain new insight and knowledge into what defines a mature, robust articular chondrocyte. Such understanding will advance therapeutic efforts to generate and support fully functional articular cartilage cells during tissue repair.

Adam received her veterinary degree from the Royal Veterinary College at the University of London in 1993. She completed her large animal internal medicine residency at Texas A&M University in 2004 and large animal surgery residency at the University of Pennsylvania's New Bolton Center in 2007. Her PhD dissertation research is being conducted at the University of Kentucky's Gluck Equine Research Center under the mentorship of James MacLeod, VMD, PhD.

"We are delighted to honor Dr. Adam and thank her for continuing her education and career toward equine research," said AAEP Foundation Chairman Jeff Berk, VMD. "If our knowledge of horse health is going to continue to advance, we must encourage and financially support more veterinarians to become researchers like Dr. Adam."

The AAEP Foundation established the Past Presidents' Research Fellow in 2006. The award is made possible through the monetary contributions of AAEP past presidents. For more information about this program and other scholarships offered through the AAEP Foundation, please visit aaepfoundation.org and select "Scholarships" in the "Apply for Funding" drop-down menu. **UK**

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**UK DEPARTMENT OF VETERINARY SCIENCE
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2015 Seminar Series**

*All seminars are at 4 p.m. unless noted otherwise below.
UK Veterinary Diagnostic Laboratory Auditorium
1490 Bull Lea Road, Lexington, KY

January 23 1-5:30 p.m.
UK Equine Showcase—Multiple speakers; A program highlighting the university's current equine programs and findings relevant to the industry.
Location: The DoubleTree Suites by Hilton

January 24 8 a.m.-5 p.m.
Kentucky Breeders' Short Course—Multiple speakers; An in-depth program on equine reproduction and horse management issues.
Location: The DoubleTree Suites by Hilton

February 26 3:30-5:30 p.m.
Reproductive Health Panel: Reproductive Surgery and Assisted Reproduction—Rolf Embertson, Rood and Riddle; Elaine Carnevale, Colorado State University

No seminars in March, April and May

June 25
Nutrition of the Performance Horse—Brian Nielsen, Michigan State University

July 30
Pain Management—Anthony Blikslager, North Carolina State University

August 27
Joint Therapy—Wayne McIlwraith, Colorado State University

September 24
Lameness in Horses—Kevin Keegan, University of Missouri

October 29
Gastric Ulcers—Frank Andrews, Louisiana State University

November 19 3:30-5:30 p.m.
Emerging Diseases Mini Symposium—Nicola Pusterla, University of California, Davis; Peter Timoney, Gluck Equine Research Center

For more information: (859) 218-1089
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Seminar Series Schedule Set for 2015

The schedule for the 2015 University of Kentucky Department of Veterinary Science Diagnostic and Research Seminar Series kicks off with the UK Equine Showcase and Kentucky Breeders' Short Course on Jan. 23 and 24 at the Double-Tree by Hilton in Lexington.

All seminars, except the showcase, short course, and November symposium, are free. The regular seminars take

place at the UK Veterinary Diagnostic Laboratory at 1490 Bull Lea Road, in Lexington.

Boehringer-Ingelheim, the Kentucky Association of Equine Practitioners (KAEP), TheHorse.com, and UK Ag Equine Programs co-sponsor the seminar series. The UK Gluck Equine Research Center and UKVDL host the events.

For those who cannot attend in per-

son, TheHorse.com films and archives these lectures, which are free to registered users at TheHorse.com/UKLectures courtesy of Boehringer-Ingelheim. **UK**

>Jenny Evans, MFA, is the interim executive director of the Gluck Equine Research Foundation and marketing and promotion specialist senior at the Gluck Equine Research Center.

2015 UK Equine Showcase and Kentucky Breeders' Short Course



Join the University of Kentucky's Ag Equine Programs for two events on two days with more than 15 top equine researchers.

January 23 4th Annual UK Equine Showcase
A program highlighting the university's current equine research programs and findings relevant to the industry.

January 24 6th Annual Kentucky Breeders' Short Course
An in-depth program on equine reproduction and horse management issues.



DoubleTree by Hilton
 2601 Richmond Rd., Lexington

For more information, contact equine@uky.edu.
www.ca.uky.edu/equine



2015 UK Equine Showcase and Kentucky Breeders' Short Course

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

The UK Equine Showcase, now in its fourth year, will highlight the university's current equine programs and relevant industry findings. It will run from 1 to 5:30 p.m. Jan. 23, with a light reception following. The 6th Annual Kentucky Breeders' Short Course is an in-depth program on equine reproduction and horse management issues that runs from 8 a.m. to 5 p.m. Jan. 24, with lunch provided.

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

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

To register for the event, visit <https://2015ukshowcaseshortcourse.eventbrite.com>.

A New Breed of Funding

Until about a year ago, I had heard the terms "crowdfunding" and "crowdsourcing" several times without fully understanding what they meant. When my wife made a small donation toward a musician's efforts to raise enough money to release her first album, I started to get an idea of what this was all about. The musician had posted a project description on a crowdfunding website called Kickstarter and invited people to make donations online. Word then spread through social media. The campaign was successful, and the musician reached her goal.

Soon thereafter, I was listening to NPR while driving to work one morning. The station was broadcasting a feature about scientists using crowdfunding to raise funding for their research. The concept was the same as for the musician, but instead of an album the final product would be a funded research project. The key to success was still effective communication by means of social media. I immediately thought this would be worth trying.

Through the years I have been studying equine parasitology, I have always enjoyed how horse owners appreciate science. *The Horse's* magazine, website, and newsletters serve as an excellent illustration of this; people genuinely like science and they want updated information. I figured this would provide a good foundation for a crowdfunding project. Furthermore, I felt my research topic, parasitology, would be a common denominator across various horse breeds, uses, and geographic locations. No matter what, horses will always have worms, and owners will always have opinions about and experiences with controlling them.

No one from the University of Kentucky had tried crowdfunding for research projects before. But there was a lot of interest in it, and a crowdfunding task force had already been established. Before I knew it, I had become the university's first pilot research crowdfunding project, examining a promising alternative treatment modality to reduce our reliance on existing dewormers to which parasites are developing resistance. My team is

A New Breed of Funding

working with a strain of naturally occurring bacteria capable of killing worms; hence, the name of our campaign is "Let the germs get the worms."

We decided to attempt to develop our own website infrastructure for crowdfunding. By doing this, we had the freedom to design the site as we wanted it, we would avoid paying the fees associated with using a commercial crowdfunding website, and American residents could obtain tax credit for their donations. With help from many excellent people at the University of Kentucky, we were able to leverage the already existing online donation system to develop a website as well as three promotional videos. We set up a Twitter account and made use of already existing Facebook and LinkedIn accounts to promote the project. We used an online group emailing service to communicate with donors and supporters.

The crowdfunding campaign launched in the beginning of January 2014 and ran for two months. During this time our page was shared and retweeted well over 400 times, the videos have been viewed more than 2,000 times, about 300 unique users signed up on the website, and we raised more than \$8,500. Further, the campaign has greatly promoted our research program, as we have appeared in several news articles and were hosted on radio shows. Interestingly, we have had some substantial donations come in after we stopped campaigning, and they don't show signs of stopping. We intend to keep the site open and provide regular updates about our project and future campaigns.

Our ultimate goal with this project is to develop a probiotic-type product for horses, but the first step is to test it against equine parasites in the laboratory. This is what we will use the crowdfunding money for, and we have already started the work. Preliminary data show a very good effect of our test bacteria against equine small strongyles, and we

UPCOMING EVENTS

January 23-24

4th Annual UK Equine Showcase and 6th Annual Kentucky Breeders' Short Course, DoubleTree Suites by Hilton, Lexington. To register, visit <https://2015ukshowcaseshortcourse.eventbrite.com>.

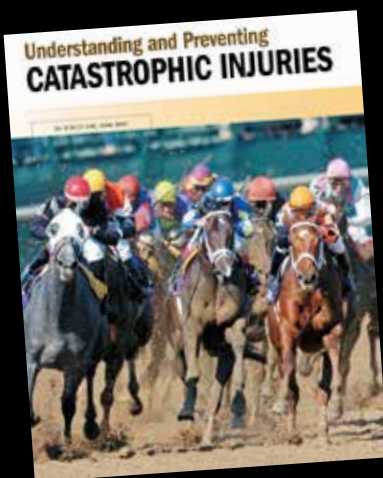
February 5, 6 p.m.

Pastures Please!! Fayette County Extension office, Red Mile Road, Lexington. RSVP to UK Ag Equine Programs at 859/257-2226 or equine@uky.edu.

are continuing to evaluate this further. You can learn more about the project and follow our progress at <http://equine-parasitology.ca.uky.edu>. **UK**

>Martin Nielsen, DVM, PhD, Dipl. EVPC, ACVM, is an equine parasitologist, veterinarian, and assistant professor at the University of Kentucky Gluck Equine Research Center, in Lexington.

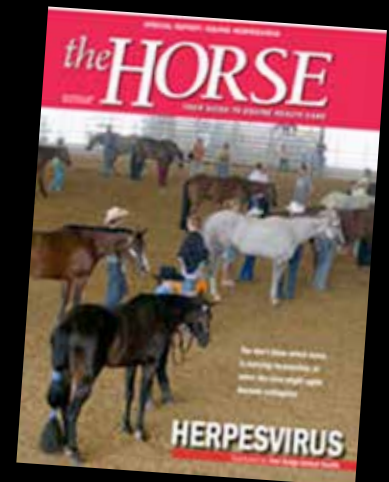
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