



The Future of Land Resources

Funds for land acquisition and trail development are drying up.

Each horse needs about two acres of land to meet its basic exercise, shelter, and forage needs. In addition, owners and riders need land for their horse-related endeavors. Unfortunately, the amount of land for sustaining our horse population and activities has been declining. This loss will continue unless horse enthusiasts come together to demand consideration of their needs in a changing economy and land market.

The U.S. Forest Service estimates that about 6,000 acres of farmland and open space are lost each day to urban development. This means we lose more than an acre of farmland per minute.

In 2008 the Equine Land Conservation Resource (ELCR) organization determined that 165 equine competition sites in 28 states had gone out of business. Most of us can point to a new subdivision or shopping mall

sitting on the site of what was once a community fairground. Sometimes urban sprawl seems inevitable. And it will continue given the economic incentive to seek lowest costs for development.

While many states and localities have implemented purchase-of-agricultural-easement programs, a growing number of the programs struggle for funding. The Farm and Ranch Lands Protection Program

(FRPP) was repealed under the 2014 Farm Bill, ending federal match funding that land conservation programs qualified for when purchasing easements on prime agricultural land. Both federal and state sources of funds for land acquisition as well as trail development and maintenance are drying up. So, as agricultural and rural lands are converted to urban uses, the land that riders need for their pursuits also disappears.

The ELCR's Deb Balliet says, "All land is saved locally," and it is done by individuals who are willing to join with others who share their interest in fighting for both land preservation and access for equestrians. Many groups and programs are focused on conserving agricultural land. But land preservation does not necessarily guarantee access.

The challenge is that most Americans don't understand the importance of the human-horse relationship. While we horsemen and -women see the value of protecting both agricultural land and access to it, to others our horses and activities are simply hobbies or even trivial pursuits. Thus, there are four things we must do to ensure enough land is preserved for our horses and activities.

We must provide horse access in creative ways to the general public that's unfamiliar with horses so they can understand the social and psychological value of human-horse

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Land Resources

interactions. We cannot gain others' support for our initiatives if they do not understand or have the opportunity to experience the ways in which horses enrich our lives. The horse community must implement a coordinated and comprehensive marketing campaign designed to build awareness.

We must work to build public understanding of the economic impact of all sectors of the equine community. Horse owners consume many goods and services, and our equine activities bring competitor and tourist dollars to communities. This is called an equine economic cluster (see below), and it represents all the businesses associated with the core activity: horses. Very few policymakers and residents are aware of the horse enthusiast dollars that flow through a local and state economy. For example, the 2012 Blowing Rock Charity Horse Show in Boone, North Carolina, generated more than \$7.7 million in income for the area over its 22-day period.

We must be vigilant and engaged with the local government to ensure equine community interests are integrated into land use planning. For most of us, monitoring land use planning meetings is not only boring but also baffling. We must educate ourselves

about the fundamentals of land use planning and then be willing to work with others both to protect the land and to gain access to community land for horseback riding through zoning ordinances.

If we want access to existing and planned trails, then we must be our own advocates and partner with other groups; many voices are more likely to get multiuse trails built than individual voices. Local and state governments have been actively developing trails over the last decade, but riders are often denied access to trails on federal and state lands. Moreover, local trails are rarely designed to allow horses access.

What we do now will determine whether the future will bring sufficient land resources for our horses' needs and our activities. We can choose to work together as an equine community to pursue our interests, or we can choose not to act because we are too busy, don't see ourselves as public seekers, or are not interested in politics and policymaking. This is our challenge and our responsibility because it's about our passion, our businesses, and our pleasure. **UK**

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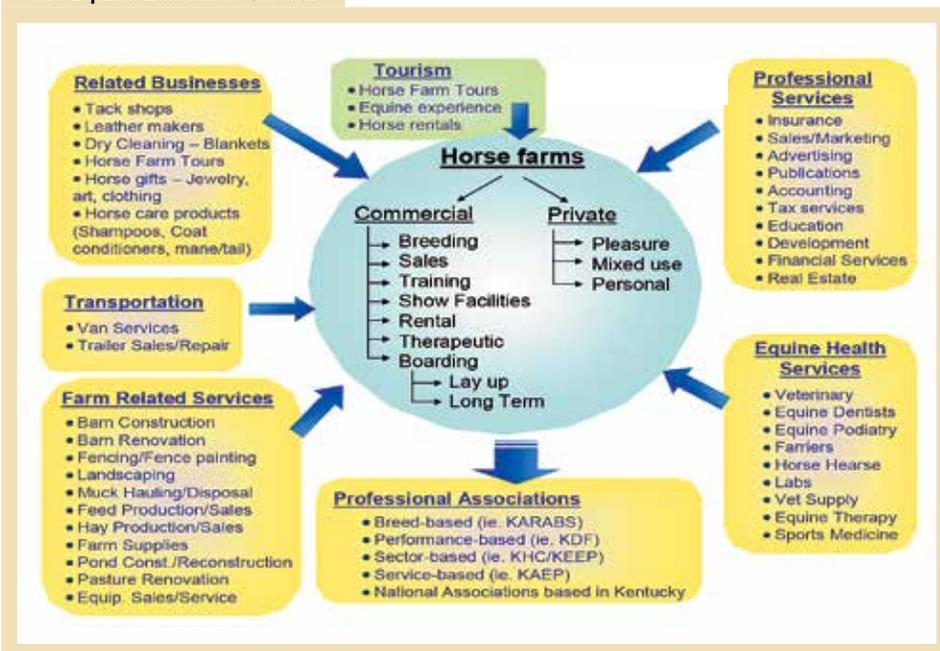
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The Horse: Your Guide to Equine Health Care

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The Equine Economic Cluster



Weed Management Plans for Horse Pastures



Horse pastures provide weeds with the ecological niches they need to survive.

Full is a good time to evaluate your horse pasture's quality because it's easy to see which weeds were most prevalent and uncontrolled during the summer and are now large and seed-producing. It is also a good time to develop a weed management plan for the coming year. An effective weed management plan should consider the following: the pasture's purpose, weed species and abundance, which weeds should be controlled and how, and sources of information.

Purpose of the pasture: If pasture grass is a significant portion of your horses' diet, you will want a high-quality, nearly weed-free forage. Conversely, a "pasture" maintained as a drylot for feeding horses will contain many weeds but there is little reason to control them, as few, if any, desirable forages grow in a drylot. Kentucky property owners typically maintain their horse pastures between these two extremes. Frequently asked questions include, "why are these weeds

in my pasture?" and "what should I do about weeds in the pasture?" Forages grown with adequate fertility that are not overgrazed will limit weed occurrence but will not prevent all weeds from growing.

Weed species, abundance, and distribution: Weeds grow in ecological niches. This means an environment exists that allows for germination, vegetative growth, and maturation. Horse pastures provide several of these ecological niches.

Kentucky is located in the temperate transition zone that allows warm-season as well as cool-season plants to grow. Warm-season weeds germinate in spring or early summer, grow, and produce seeds before frost. Cool-season weeds germinate and produce some growth in the fall and produce seeds the following spring or summer. The many cool- and warm-season weed species provides horse pasture managers with the challenge of determining what weeds, if any, they should be

controlling in a pasture. The most abundant weeds in horse pastures usually are annual species that produce thousands of seeds. Spiny pigweed, also known as spiny amaranth, produces more than 100,000 seeds per plant. This weed is widespread and grows most often in compacted areas along fences and around feeding and watering areas in pastures. Spiny pigweed also is a good example of weeds' "patchiness," meaning they only grow in certain portions of the pasture where their ecological niche occurs.

Which weeds to control and method and time of weed control: Generally, you should remove from pastures all poisonous weeds and weeds that inhibit grazing. Poison hemlock, for instance, grows across Kentucky and is toxic to

horses and other animals. Although horses rarely eat poison hemlock, property owners should remove it. Musk thistle and bull thistle grow throughout Kentucky and inhibit grazing. Canada thistle occurs less frequently but also inhibits grazing and is more difficult to control. Large crabgrass and yellow foxtail are warm-season summer grasses. Horses graze the large crabgrass but not yellow foxtail. Buckhorn plantain is a cool-season plant that horses consume when pasture grass is limiting. Horse will readily consume any small, tender weeds but rarely consume them as large plants.

Methods of removing pasture weeds include hand removal, mowing, and herbicide application, and each has its advantages and disadvantages. Hand-weeding can be very effective

Hats Off Day

Hats Off to Kentucky's Horse Industry Day, a celebration of the horse and its impact on the state of Kentucky hosted by Rood & Riddle Equine Hospital, was held July 25 at the Kentucky Horse Park. The day offered fun family activities, including arts and crafts for children, pony rides, interactive educational booths, and equestrian competition. UK Ag Equine Programs has participated in the event for the past nine years.



UK AG EQUINE PROGRAMS PHOTOS

Weed Management

and is particularly useful for removing poisonous plants, such as poison hemlock, from the pasture. Poisonous plants need to be controlled but should also be removed from the pasture to prevent animals from consuming them. The downside of hand-weeding is that the process is slow and inefficient for large areas. Mowing is rarely effective for killing weeds in pastures—mowing low enough to kill the weeds (2 inches or less) removes valuable forage. Mowing heights of about 6 inches will keep some large weeds from producing seeds but does not control smaller weeds. Herbicides are efficient and provide excellent control, but in areas of the transition zone such as Kentucky, there is not one herbicide that will control all the weeds with one treatment.

There are optimum times to control weeds with herbicides. The following months are the preferred times for herbicide treatment of several weedy species in Kentucky:

October-November: Common chickweed, henbit, purple deadnettle, dandelion, buckhorn plantain, buckhorn plantain, musk thistle, bull thistle, Canada thistle, poison hemlock.

February-March: buttercups, curly dock, broadleaf dock, chicory

May-July: spiny pigweed, white clover, hemp dogbane, goldenrod, cocklebur, perilla mint, common ragweed, jimsonweed

Consult your local Cooperative Extension Service agricultural agent for specific information on herbicides in your area. Remember, not all herbicides are registered for use in all states and countries so read the label carefully, and follow all directions. Many Cooperative Extension Services have publications regarding weed control in pastures.

Examples of such publications are:

- Broadleaf Weeds of Kentucky Pastures. AGR-207. www.ca.uky.edu/agc/pubs/AGR/AGR207/AGR207.pdf.
- Weed Management in Grass Pastures, Hayfields, and Other Farmstead Sites. AGR-172. www.ca.uky.edu/agc/pubs/agr/agr172/agr172.pdf. **UK**

>William W. Witt, PhD, emeritus professor in the Department of Plant and Soil Sciences at the University of Kentucky, provided this information.

GRAD STUDENT SPOTLIGHT

KELLY PRINCE

From: Parkersburg, West Virginia

Degree and institute where received:

BS, Equine Science and Management, University of Kentucky, 2013

Currently working on MS in Integrated Plant and Soil Science from the University of Kentucky

Kelly Prince chose to attend the University of Kentucky for her undergraduate degree because of the equine science and management program, opportunities for immersion into the equine industry, and potential resources and networking the university could provide. Going into her senior year, Prince began an internship with Ray Smith, PhD, professor and forage extension specialist at UK and the UK Horse Pasture Evaluation Program. During that time, she assisted with research and field evaluations of Kentucky horse farms to improve pasture management and discovered an interest in research and extension as well as forages and their effect on equine nutrition.

Prince's current research project focuses on evaluating the carbohydrate variation of pasture forages. The project aims to expand the understanding of carbohydrate variation in pastures to help better manage horses that require low- or high-carbohydrate diets. Because this research is interdisciplinary, Prince has the opportunity to work with a diverse group of researchers including Laurie Lawrence, PhD, professor of equine nutrition in animal and food science at UK; Isabelle Kagan, PhD, a researcher with the USDA Agricultural Research Service; and Ben Goff, PhD, an assistant professor in plant and soil science at UK.

"The objective of our study is to evaluate the effects of cool-season forage grass and legume cultivars, soil fertility, climatic, and seasonal and diurnal (daily) variation on carbohydrate accumulation in pastures," Prince said.

Methods for the research involve quantifying water-soluble carbohydrates and ethanol-soluble carbohydrates from 10 cool-season grass cultivars, which represent four different species, and four cool-season legume cultivars, which represent two different species. To evaluate diurnal and seasonal effects, samples are being taken from research plots located on UK's Maine Chance Research Farm twice daily, every other week, from April through October. Fertility treatments were also applied, and weather data is being collected to evaluate fertility of the plants and environmental effects.

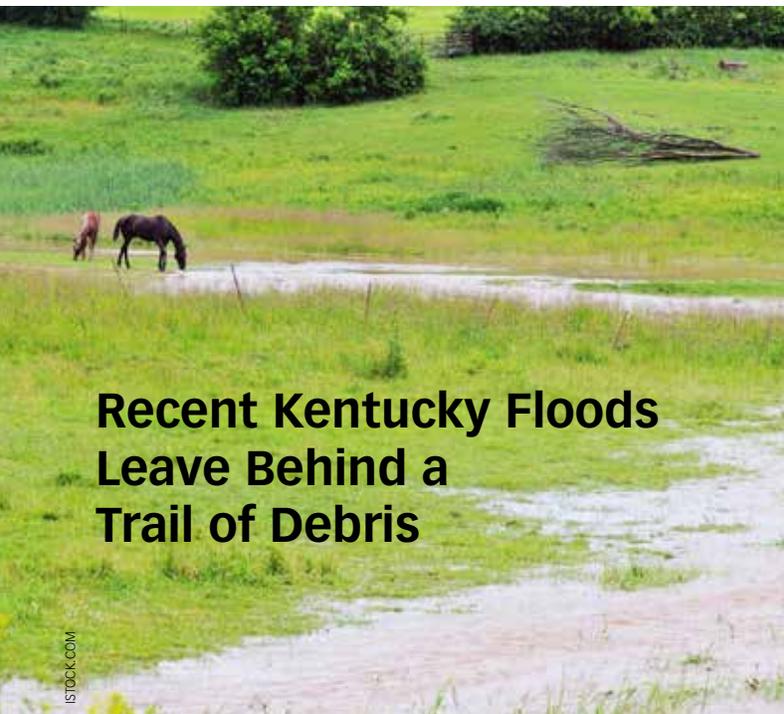
"I value the importance of my thesis research not only in aiding the understanding of carbohydrates in forages, but in the consequential impacts to animal and pasture management for health and disease purposes, specifically equine laminitis," Prince said. "Understanding how carbohydrate levels in pastures fluctuate by the time of day, season, soil fertility, and weather will greatly aid in managing horses with laminitis or other metabolic issues and potentially reduce the risk for such conditions."

This summer, Prince took an ecology of grazing lands systems class, which concluded with a trip to the southwestern United States to explore grazing systems. The class stopped at a new location every day, moving from Dallas, Texas through New Mexico and ending in Denver, Colorado. They explored research stations, producer ranches, conservation centers, and wildlife and national parks.

Prince has assisted in other equine and plant research projects during her time at UK. One that stood out in particular was a project looking at ensiling (turning grass into silage) effects on viability of maretail, red clover, and tall fescue seed. After completing her degree, Prince hopes to work in academia and combine her interests of research, teaching, and extension. **UK**

>Hannah Forte is a communication intern with the UK Ag Equine Programs and Gluck Equine Research Center and undergraduate student majoring in community and leadership development at UK.





Recent Kentucky Floods Leave Behind a Trail of Debris

Recent heavy rains and flooding left behind a trail of damage and debris in many areas of the state. While community leaders might be ready to tackle the task of cleaning up and rebuilding, it is important to keep human and environmental health in mind before getting started.

“Kentuckians face a number of health and safety issues and compliance hazards when dealing with how to handle and properly dispose of storm debris,” said Amanda Gumbert, extension water quality liaison for the University of Kentucky College of Agriculture, Food and Environment. “It may seem like a monumental task, but there are some guidelines to help.”

The Kentucky Department for Environmental Protection emphasizes that those cleaning up should consider all demolition debris from homes or buildings as potentially asbestos-contaminated material. Gumbert said that means the debris needs to stay in a wet condition from demolition to final disposal.

“You can take debris to a permitted construction or demolition landfill or a contained landfill,” she said. “Don’t burn debris from homes or businesses, including plastics, structural materials, roofing, insulation, siding, appliances, carpet, furniture, and other household items.”

Burning construction and demolition debris can release harmful compounds into the air that can threaten human health, especially in people with asthma or compromised immune systems.

When possible, recycling is the preferred disposal method for many kinds of debris, including appliances. All household garbage and residential waste must go to a contained landfill.

While burning vegetative and woody debris is permitted, local governments strongly encourage people to recycle these things by composting, shredding, or chipping to reuse as mulch.

“If you are going to burn vegetative debris, you need to contact your local fire department first,” Gumbert

WEED of the Month

CREEPING CHARLIE, GROUND IVY

Scientific name: *Glechoma hederacea* L.

Life Cycle: Creeping perennial

Origin: Eurasia

Poisonous: Yes

Ground ivy is distributed widely across the United States, except for in the desert Southwest. It grows in lawns, flowerbeds, and pastures. Horse pasture infestations are more severe during overgrazed or other conditions that inhibit grass growth.



Ground ivy is a member of the mint family that creeps along the ground and can grow to three feet or more in length. The stems are square, and flowers are a reddish-purple.

This plant is bitter, and horses generally do not graze it unless it is the only forage available. All plant parts are toxic, including when in cured hay. Generally, horses must consume large quantities for a toxic reaction to occur. Excessive salivation, difficulty with breathing, excessive sweating, and dilated pupils are clinical signs that occur more frequently when this weed is a component of cured hay.

Ground ivy is not easily controlled. Hand-weeding is ineffective because all roots will not be removed and regrowth occurs. Mowing is ineffective because the weed grows horizontally. Herbicides are available for control in horse pastures. Consult your local Cooperative Extension Service personnel for herbicidal control options in your area. [UK](#)

>William W. Witt, PhD, emeritus professor in the Department of Plant and Soil Sciences at the University of Kentucky, provided this information.

said. “They should oversee the burning and ensure you have adequate fire breaks. You also have to remove all trash, tires, construction, and demolition debris prior to burning.”

Removing stream obstructions such as fallen trees or debris also requires special considerations. Landowners should use a one-step removal process to pull or lift out storm debris and place it outside the floodplain.

“Only operate heavy equipment from the stream bank to scoop or lift out material,

and only perform work from outside of the flowing section of streams. It will be necessary to maintain vegetation growing along stream banks to reduce erosion.

For more information about how to dispose of storm debris, contact a local office of the UK Cooperative Extension Service or the Kentucky Division of Waste Management. [UK](#)

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

Dewormer's Effect on Scratches

Q I have read several articles about scratches this year, and I never see the solution that without fail clears up my horses' scratches. For my horses, if I deworm a couple of times with ivermectin/praziquantel a week or two apart, their scratches disappear. I don't have to put any topicals on or scrape them off. I'm wondering why I have never read about this.

*Donna Rupp
Orland Park, Illinois*

A First of all, scratches is a skin condition of the lower limbs sometimes caused by a pathogen, be it a virus, bacterium, fungus, or parasite. To answer your question it would help to



ALEXANDRA BECKSTETT
If your horse's scratches are caused by parasites, then dewormer might help treat them.

know more about your horses. What type of environment do they live in, and how do these scratches cases present—is there a seasonal occurrence, or do

they appear year-round? Where on your horses are they located? What type of horse do you have? This information would help with identifying the most likely explanation. However, here are a few possibilities for why you saw scratches relief after deworming.

Ivermectin has activity against nematodes, insects, and mites. If the scratches tend to disappear after ivermectin treatment, the explanation could be skin parasites. The most prevalent skin mite infesting horses is *Chorioptes equi*, which is very common in draft horse breeds with well-developed feathers (long fetlock hair). The mites live in the skin's superficial layers and cause a chronic itchy dermatitis that often leads to lesions because the horses are scratching themselves. These mites primarily infest the legs, but can also be found elsewhere on the horse's body. They are sensitive to ivermectin, but oral preparations rarely work because they do not distribute very well to the skin's superficial layers.

In the insect category we have lice. There are two types of lice that infest horses. The most common is a chewing louse (*Bovicola equi*), which lives on the skin and eats skin debris. The less common type is a blood-sucking louse, *Hematopinus asini*. Both of these cause itching, which can lead to scratches. However, ivermectin is not very likely to be effective against the chewing louse, given its superficial location on the skin.

Then there are the worms. Summer sores are common in some areas of the United States and elsewhere. To my knowledge, Illinois is not a hot spot for summer sores, but that doesn't mean they could not occur there. They have a characteristic granulomatous (chronically inflamed) presentation that rarely resembles simple scratches. They are caused by the *Habronema* stomach worm's larvae. This parasite uses different kinds of flies as its intermediate host. These flies are attracted to wounds and deposit larvae in them. The chronic inflammatory condition that develops in the wound does not resolve until the larvae are effectively treated. Summer sores are quite seasonal in occurrence, and many horse owners struggle with lesions returning every year.

Other possible parasite causes are the filarial worms *Parafilaria multipapillosa* and the neck thread-worm *Onchocerca cervicalis*. *Parafilar-*

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The horse is at the heart of everything we do.



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Q&A

ia cause bleeding lesions in the skin, and larvae can be found in the blood. The neck threadworm causes a localized itching dermatitis along the neck and ventral chest regions. Veterinarians report that ivermectin has good efficacy against both of these.

In summary, there are a few potential explanations for your observations. If ivermectin makes those scratches disappear, there must be a parasitic reason. However, it is very unlikely to find a parasitic cause for every scratches lesion you find on your horses, and I do encourage you to consider other explanations as well. It's not likely that a dermatologist would have parasites on the top of his or her list of potential causes of skin scratches. It would be very useful to have some diagnostic work done and possibly find out what is going on with your horses. It always helps to know what you are treating, and depending on what you find there may be additional useful procedures to have in place to help reduce the incidence of these scratches.

Treating with ivermectin certainly would not be the first thing I'd suggest for scratches, but you could try it in cases where other treatments have failed. **UK**

>Martin K. Nielsen, DVM, PhD, Dipl. EVPC, ACVM, is an equine parasitology researchers at the University of Kentucky's (UK) Maxwell H. Gluck Equine Research Center.

American Veterinary Epidemiology Society Recognizes UKVDL Scientists

The American Veterinary Epidemiology Society (AVES) recently awarded an honorary diploma to Jacqueline Smith, MSc, PhD, at the annual American Veterinary Medical Association meeting in Boston, Massachusetts.

Smith is the epidemiology section chief for the University of Kentucky Veterinary Diagnostic Laboratory (UKVDL) in the UK College of Agriculture, Food and Environment. UKVDL director and AVES executive director and president

The Midwest Association of Veterinary Pathologists Meeting



More than 50 pathologists attended the 34th annual Midwest Association of Veterinary Pathologists meeting hosted by the University of Kentucky on Aug. 6-7 at the E.S. Good Barn on UK's campus. The UK Veterinary Diagnostic Laboratory's Laura Kennedy, DVM, Dipl. ACVP, assistant professor, and Uneeda Bryant, DVM, assistant professor, served as co-chairs. In the photo, Steve Reed, DVM, MS, Dipl. ACVIM, of Rood & Riddle Equine Hospital, and Kennedy presented one of the four keynote talks on "From clinical presentation to final diagnosis: an integrative approach to equine neurology."



elect Craig Carter, DVM, PhD, Dipl. ACVPM, said Smith has revolutionized the way the laboratory uses large volumes of diagnostic testing data to delineate current animal health trends.

"Jacqueline has played a key role in our ability to provide early detection of animal disease outbreaks via a custom-developed mathematical disease cluster detection system," he said. "This is vital to keeping Kentucky veterinarians, the Kentucky Department of Agriculture, and the Kentucky Cabinet for Health and Family Services informed regarding endemic and emerging animal diseases, as well as confirmed diagnoses of zoonotic diseases that can spill over into the human population."

Smith received her bachelor's degree in agriculture from Berea College before moving to Madison, Wisconsin, to complete a master's in dairy science in 2001. She joined the UKVDL epidemiology group as a research analyst in 2006 while earning a doctorate in animal science from UK with a strong focus on epidemiology, graduating in 2012. She

has served as the epidemiology section chief since 2008.

The society annually awards the honorary diploma to up to 10 recipients who have made significant contributions to veterinary epidemiology. **UK**

Upcoming Events

September 8, 5 p.m.

UK Equine Science and Management Program Reception, Spindletop Hall

September 24, 4 p.m.

UK Department of Veterinary Science Equine Diagnostic and Research Seminar Series, Kevin Keegan, University of Missouri, will speak about lameness in horses, UK Veterinary Diagnostic Laboratory

September 30-October 3

UK College of Agriculture, Food and Environment Round Up, Good Barn

The Asbury University Equine Department presents:

— 11th-Annual U.S. Horse — **PLOWING COMPETITION**

Sept. 3-6, 2015

Servant Heart Farm – Wilmore, Ky.

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Competition Fee is \$35 per Class [\$20 for Novice Class]

Classes:

Walking Plow Antique
2-Horse Sulky Open
3-Horse Sulky Novice
Gang Plow

For information, contact:

Dr. Marty Bilderback
marty.bilderback@asbury.edu
(865) 213-2784

EVENT INFORMATION

Servant Heart Farm is located at 9517 Harrodsburg Road (U.S. 68) in Wilmore, Kentucky.

Kentucky Foxfire Festival will be on site Friday evening and all day Saturday 11 a.m. to 8 p.m. with bluegrass concerts, arts and crafts, as well as demonstrations. Festival pricing is \$10 in advance or \$15 at the door. Food is available at festival.

Hotel and B&B accommodations during your stay can be found at asbury.edu/lodging. Be sure to mention Asbury University to possibly get special rates.

Health requirements for horses entering Kentucky are as follows:

- Negative Coggins test completed within 12 months.
- Certificate of Veterinary Inspection (CVI) issued by an accredited veterinarian within 30 days prior to entry, including temperatures, test, and all applicable information.
- Must not originate from a quarantined premises.

SATURDAY, SEPTEMBER 5

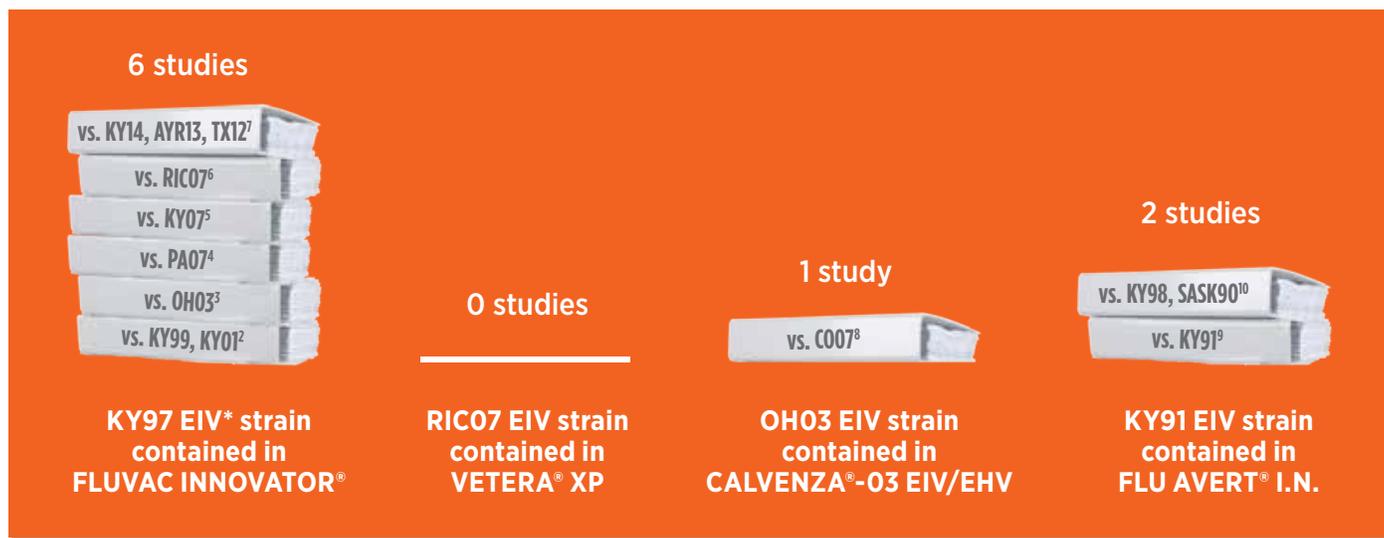
- 8 a.m.Biscuit breakfast for competitors/workers
- 9:30 a.m. Educational booths set up
- 9:50 a.m.Opening Ceremony
- 10 a.m.Start plowing
- 10:30 a.m. Children's activities, face painting, pony rides, etc.
- NoonLunch available at Kentucky Foxfire Festival. Asbury University cafeteria or off-site
- 4 p.m.Plowing ceases
- 5 p.m.Award Ceremony
Dinner on your own



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** World Organization for Animal Health

¹ West Nile-Innovator and Fluvac Innovator MDI Sales Data as of 12/31/14. Zoetis. Dec. 2014.

²⁻⁷ Data on file, Study Report No. 671-02-001R, 671-08-004.R, 766-09-002.R, 100REQBIO-01, 140REQBIO-1 and 15EQRGBIO-02, Zoetis Inc.

⁸ Calvenza vs. C007 ACVIM 2011 abstract reference.

⁹ Townsend HGG, Penner SJ, Watts TC, Cook A, Bogdan J, Haines DM, Griffin S, Chambers T, Holland RE, Whitaker-Dowling P, Youngner JS, and Sebring RW: Efficacy of cold-adapted, intranasal, equine influenza vaccine: challenge trials.

¹⁰ Chambers TM, Holland RE, Tudor LR, Townsend HGG, Cook A, Bogdan J, Lunn DP, Hussey S, Whitaker-Dowling P, Youngner JS, Sebring RW, Penner SJ and Stiegler GL: A new modified-live equine influenza vaccine: phenotypic stability, restricted spread and efficacy against heterologous virus challenge.

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