

Researchers Review Muzzled Horse Behavior

An owner's No. 1 goal when outfitting their horse with a muzzle is usually related to weight management—either keeping them from gaining weight or helping them shed some pounds. While study results have shown that muzzles are, indeed, effective for weight control, they can also have other effects. For instance, they can alter horse behavior.

However, few studies have documented exactly how muzzling impacts behavior. So, Ashley Fowler, MS, and colleagues at the University of Kentucky, in Lexington, conducted a study to compare the behavior of 12 horses when they were muzzled and unmuzzled. She presented the results at the 2017 Equine Science Society Symposium, held May 30-June 2, in Minneapolis, Minnesota.

Fowler and colleagues observed the horses (turned out in groups of



When wearing muzzles, horses spent 81% of their time standing and 16% of their time walking.



KEITH LARSON

Studies have shown that horses appear to adjust to wearing grazing muzzles in two to three weeks.

three for six hours) for one hour, two days per week, for five weeks. The researchers watched their unmuzzled behavior for the first week, then monitored their muzzled behavior for Weeks 2 through 5. The team tested closed-bottom muzzles that prevented feed ingestion, but allowed water consumption.

"We used total exclusion muzzles because some horses become really adept at grazing through muzzles that contain a hole," Fowler explained, "so much so that they can continue to gain weight even while wearing a muzzle. For these horses, exclusion muzzles are a good option to still allow horses access to turnout, for exercise—which could encourage further weight loss—and socialization."

The team found that:

- When unmuzzled, horses foraged 52% of the time, stood 41% of the time, and walked 6% of the time; and
- When muzzled, horses stood 81% of the time and walked 16% of the time.

Although horses spent more time walking around their paddocks when muzzled, they also more than doubled the time they spent standing, Fowler said. She cautioned that "movement during grazing bouts in unmuzzled

horses was not recorded, so the difference in total movement is unknown." She said additional studies using pedometers could help shed light on the total movement and energy expenditure between muzzled and unmuzzled horses.

Additionally, the team observed that muzzled horses rubbed their grazing muzzles and pawed more frequently during the first two weeks of muzzling compared to the last two weeks. Fowler said this suggests it took the horses about two weeks to acclimate to wearing the muzzles. Unmuzzled horses did not have muzzles to rub, she added, and pawed very infrequently.

She also noted that the team observed altered drinking behavior when

In This Issue

Parasite Control: An Update	02
Nocardioform Placentitis	04
Equine Summit Recap	05
Farm and Facilities Expo Recap	09

Muzzled Horse Behavior

horses wore muzzles.

“During the first week of muzzling, horses increased the number of times they visited the water trough,” she said. “While we didn’t measure water consumption, we suspect that instead of drinking, horses were playing in the water or attempting to remove their muzzles in the trough because we didn’t see an increase in the frequency of urination with the increase in visits to the water trough.”

Finally, Fowler said the team observed more social interactions when horses were muzzled than when they were unmuzzled.

“Because horses aren’t able to graze anymore, they must fill their day up with other behaviors, and increasing social interactions is one way to do so,” she said. “So even though horses do spend more time standing around outside when they are muzzled, at least they are able to have social interaction.”

Fowler cautioned that “these horses wore total exclusion muzzles; muzzles that allow reduced foraging might have different effects on behavior.”

Muzzle use remains an effective equine weight-management strategy that many owners employ daily.

“Make sure that muzzles are well-fitting and sufficiently padded,” Fowler advised. “Ill-fitting muzzles can cause sores (especially when the horses are trying to rub their grazing muzzles off) and could also make it easier for the horse to remove the grazing muzzle.”

She also encouraged owners to wait out the horse’s acclimatization period, even if he develops new behaviors.

“Horses appear to adjust to muzzling within two to three weeks,” she said.

“If an owner sees a horse rubbing their muzzle or pawing a lot during the first couple weeks of daily muzzling, they shouldn’t give up. It is likely that the horse will reduce these behaviors in a couple weeks.” **UK**

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

Masthead

University of Kentucky Ag Equine Programs

Jenny Evans, MFA, co-managing editor and senior veterinary science marketing and promotion specialist, jenny.evans@uky.edu

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

Bluegrass Equine Digest Advisory Board

Bob Coleman, PhD, PAS, associate professor, director of undergraduate studies for equine science and management and extension horse specialist

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

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

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

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

Bluegrass Equine Digest Editorial Committee

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

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

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

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

The Horse: Your Guide To Equine Health Care

Erica Larson, News Editor

Brian Turner, Layout and Design

Parasite Control: An Update

Internal parasites of horses have been recognized for centuries. But until the early 1900s, methods for the control of equine endoparasites lacked a scientific basis. For example, in the 1600s one recommendation was to incise (cut with a surgical instrument) the horse’s palate with the intent that the ingested blood would kill any internal parasites. Beginning in the 1940s and extending to the 1980s, new classes of antiparasitic compounds were developed approximately every 10 years.

Currently in the United States, only benzimidazoles (fenbendazole and oxbendazole), tetrahydropyrimidines (pyrantel pamoate and pyrantel tartrate), and macrocyclic lactones (ivermectin and moxidectin alone or combined with praziquantel) are commercially available for parasite control in horses.

The major endoparasites of horses include bots, large strongyles, small strongyles or cyathostomes, ascarids, and tapeworms. Large strongyles (*Strongylus* spp) are one of the most significant equine parasites. The larval stages can cause disease due to migration in blood vessels and abdominal organs. Drug resistance is not evident in the case of large strongyles.



KRISTEN M. JANICKI

There are only three classes of dewormers—benzimidazoles, tetrahydropyrimidines, and macrocyclic lactones—available in the United States for controlling equine parasites.

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

Parasite Control Update

Cyathostome larvae do not migrate parenterally like *Strongylus* spp, but encyst in the mucosa and submucosa of the horse's large intestine. Intestinal disease can be induced by cyathostomes when large numbers of larvae excyst from (exit) the lining of the large intestine, a condition called "larval cyathostomiasis." Resistance to fenbendazole, oxbendazole, and pyrantel pamoate is now common among cyathostomes. Also, both ivermectin and moxidectin have become less effective against immature cyathostomes in the lumen of the large intestine; thus, the life cycle is shortened.

Heavy infections with adult ascarids (*Parascaris* spp) can cause intestinal blockage and rupture because of their bulk. These too have become resistant to ivermectin, moxidectin, and pyrantel pamoate.

The final group of equine endoparasites, tapeworms (*Anoplocephala* spp), can also result in intestinal hypertrophy, blockage, intussusception, and rupture; they do not exhibit drug resistance.

Parasite treatment schedules have been based on the life cycle of the parasites since the early 1900s. In the mid-1960s, it was suggested that horses should be dewormed for strongyles every six to eight weeks. This frequent deworming was thought 1) not to provide time needed for *Strongylus* spp to mature, 2) to help decrease potential cyathostome egg deposition on pastures, and 3) not to allow time for ascarids to mature.

High strongyle fecal egg counts indicate contamination of pastures and increased potential for ingestion of infective larvae by grazing horses. Thus, profiling the number of eggs per gram (EPG) in feces has been used in updating deworming schedules. Since *Strongylus* spp are now rarely encountered, a deworming schedule can be more flexible. Unfortunately, there is no direct relationship between EPG values and cyathostome numbers.

A suggested deworming program is as follows:

■ Establish a strongyle EPG profile

Commentary The Future of Parasite Control?

Dr. Gene Lyons (PhD) provides a brief review of the history and current status of anthelmintic treatment of important equine gastrointestinal parasites. No new anthelmintics with newer modes of action have been introduced since the early 1980s, and levels of anthelmintic resistance are ever increasing in cyathostomins and *Parascaris* spp parasites. While resistance is slow to develop, work by Lyons has clearly illustrated that once it appears in a given parasite, it is there to stay.

Today, we can expect resistance to at least one drug class to be present in every equine operation across the world, and an overwhelming majority will feature multi-drug resistance. With only three classes to choose between, we are running out of treatment options. A pertinent question to ask is how to tackle this emerging crisis and what to expect in the future.

The first step is to acknowledge the extent of the problem. Despite recommendations given during the past couple of decades, a majority of individuals in the industry continue to use old-fashioned parasite control programs based on frequent treatments given year-round without any consideration of treatment efficacy, parasites present, and climatic conditions. If no diagnostic testing is done, resistance will not be identified.

For the long term, we need new anthelmintic drug classes with new modes of action. It is important to learn from the past, however, and realize that no drug class will remain effective indefinitely, and reverting back to treatment regimens of the past would be a complete mistake.

The pharmaceutical industry is not anticipating developing any equine products in the foreseeable future. Recent pharmaceutical trends are aimed at combination deworming products (i.e., formulations where two or more dewormers targeting the same parasites are combined into the same product). Research in the sheep industry has also highlighted the importance of reducing treatment intensity to avoid development of multi-drug resistance. A recent project by the author highlighted the importance of high starting efficacy of the given combination. If combination treatment efficacy is markedly less than the desired 95% or above, resistance could develop quickly.

The author's laboratory is also testing a bacterial dewormer. Strains of naturally occurring *Bacillus thuringiensis* produce crystal proteins capable of killing worm parasites. If successful, this could become an anthelmintic product in the future.

Perhaps the most important element in future parasite control programs is utilization of good diagnostic tools. Fecal egg counts will remain a cornerstone of control programs, but they have limitations in not providing information about larval stages and specific types (species) of parasites present. Recent collaborations have led to several new diagnostics, including species- and stage-specific serum ELISAs for important strongyle parasites, and an ultrasonographic technique for determining ascarid burdens in foals.

One current project is making use of DNA-sequencing technologies to identify all parasite species present in a horse. Most recently, we have developed an automated smartphone-based fecal-egg-counting system, which allows easier, quicker, and more precise fecal egg counts to be determined. Taking these diagnostic approaches collectively, the goal is to enable veterinarians and their equine clients to make more informed decisions about parasite control. The road to effective and sustainable parasite control is evidence-based, with veterinarians playing a central role. [UK](#)

>Martin K. Nielsen, DVM, PhD, Dipl. EVPC—martin.nielsen@uky.edu—859/218-1103—UK
Maxwell H. Gluck Equine Research Center, Lexington, Kentucky

This was reprinted from the *Lloyd's Equine Disease Quarterly*, April 2017, Volume 26, Number 2.



COURTESY DR. MARTIN NIELSEN

Recent collaborations have led to several new diagnostic techniques, including an ultrasonographic method for determining ascarid burdens in foals.

Parasite Control: An Update

for individual horses rather than deworming all horses; a study of 1,114 Thoroughbred mares showed that one fecal sampling per horse was sufficient for establishing a strongyle EPG profile.

- For strongyles, use ivermectin or moxidectin alone or in combination with praziquantel twice a year—consider treating in the spring and fall. While benzimidazoles and pyrantel might be ineffective on cyathostomes, they could be efficacious in treating other parasite species.

- Treat foals every eight weeks for ascarid infection until they become yearlings; oxibendazole is currently considered the drug of choice followed by fenbendazole.
- Control *Strongyloides* with ivermectin or oxibendazole and tapeworms with praziquantel or pyrantel pamoate/tartrate. [UK](#)

>E.T. Lyons, PhD—elyons1@uky.edu—859/218-1115—UK Maxwell H. Gluck Equine Research Center, Lexington, Kentucky

This was reprinted from the *Lloyd's Equine Disease Quarterly*, April 2017, Volume 26, Number 2.

Nocardioform Placentitis from an Epidemiological View

The nocardioform placentitis outbreak in Kentucky's 2011 foal crop was concerning to the equine industry. While not on as large a scale as seen in 2011, more cases of the disease are being confirmed in the 2017 foal crop in Kentucky than in the last several years (Figure 1).

Nocardioform placentitis was first identified and characterized in the mid-1980s. Sequencing of the causative agents led to the term "nocardioform" due to the phylogenetic relatedness of this large family of bacteria. The most common organisms have been identified as various *Amycolatopsis* and *Streptomyces* spp and *Crossiella equi*. Outcomes from nocardioform placentitis can range from abortion, delivery of weak but viable foals, or delivery of normal foals; all outcomes are dependent upon the severity of the placentitis. In some cases, foals born alive are not viable and are euthanized.

In 2011, due to subsidies paid for placental submissions and examination, the response from the local equine industry was exceptional and the UK Veterinary Diagnostic Laboratory (UKVDL) witnessed the largest number of nocardioform placentitis cases submitted on record. The good news was that 70% of the 2011 cases resulted in viable foals.

Concerns of increased incidence of nocardioform placentitis in the 2017 foal crop surfaced in December 2016 with a local veterinarian indicating he was seeing an increase in cases. Pathologists and epidemiologists at the UKVDL also noticed an increase in cases submitted to the lab in January

2017 and alerted local practitioners and farm managers through listserv and social media.

Typically, nocardioform cases are first noted as early as October and run through May of any given year. The majority of cases are diagnosed from December through April, usually peaking in mid-March (Figure 2). Through the third week of February 2017, the UKVDL has confirmed 44 cases of nocardioform placentitis. Of these 44 cases, 31 have resulted in abortion, 12 in viable foals, and in one case a live but nonviable foal.

The means of transmission is not yet identified. Nocardioform lesions are not similar to those of other types of bacterial placentitis or septicemic bacterial placentitis. Environmental factors are being investigated thoroughly and early analysis indicates an increase in nocardioform placentitis cases after a summer of hot, dry weather. Nocardioform placentitis cases are almost always lower in years associated with a high incidence of leptospiral abortions, which is correlated with weather that is wetter than normal.

Analysis of affected farms indicates larger farms with more pregnant mares

Figure 1. Nocardioform placentitis cases seen at UKVDL from 1991 to Feb 21, 2017, by foaling season.

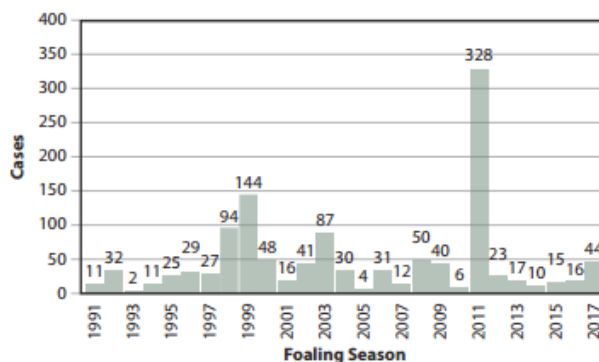
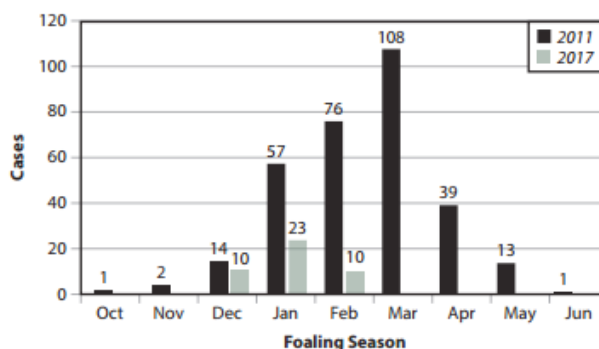


Figure 2. Nocardioform placentitis cases seen at UKVDL by month for 2011 and 2017 foaling seasons.



and higher stocking densities are at greater risk. Preliminary data indicate that mares that spend more time in the barn are at risk of developing the disease; increased grazing times appear protective. There is a statistical indication that pre-breeding treatments with non-steroidal anti-inflammatory drugs or progesterone could be protective, but this needs further study. Mares that are given post-breeding human

Nocardioform Placentitis

chorionic gonadotropin appear to be at significantly lower risk, but this also requires further study.

Based on cases of nocardioform placentitis received by UKVDL from Jan. 1, 2010, through Feb. 21, 2017, there is little evidence that the disease recurs in particular mares. One exception is a mare that had a placenta submitted in 2011 that was positive for

nocardioform and a fetus submitted in 2016 that also was diagnosed with the disease. The likelihood of recurrence of the disease in previously affected mares would appear extremely low. **UK**

>Jackie Smith, PhD, MSc, Dipl. AVES—jsmit8@uky.edu—859/257-7559—UKVDL, Lexington, Kentucky

This was reprinted from the Lloyd's *Equine Disease Quarterly*, April 2017, Volume 26, Number 2.

UK Research Reveals Way to Improve Legume Nitrogen Production

Legumes, such as clover and alfalfa, have long been known for their nitrogen-fixing properties, and a group of UK scientists have discovered a more efficient way for these plants to fix nitrogen.

Through a symbiotic relationship with soil-borne rhizobia bacteria, legumes can fulfill their own nitrogen needs and produce and leave enough in the soil for other plants to use. This reduces the need for topical nitrogen fertilizers, which are costly and can cause environmental pollution.

But not all legumes are the same when it comes to their nitrogen fixation efficiencies. In fact, different environments and bacterial strains can result in legumes fixing little to no nitrogen at all.

Recently, Hongyan Zhu, PhD, a professor in the UK College of Agriculture, Food and Environment, and his team of researchers found two antimicrobial peptides in the model legume *Medicago truncatula* (barrelclover or barrel medic) that kill certain rhizobial bacteria as the nitrogen fixation process begins. This model legume is closely related to the forage legume alfalfa.

"This finding offers scientists a strategy to improve nitrogen fixation in legumes by selecting or manipulating these genes to accept more bacteria," he said. "This could potentially allow legumes to fix more nitrogen."

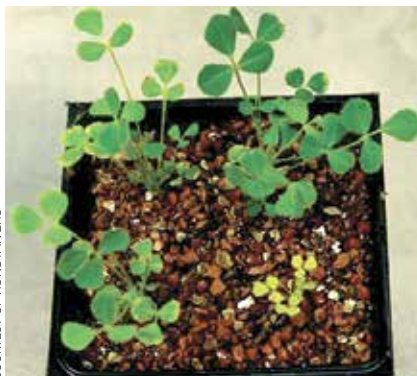
Zhu believes the original function of these antibacterial genes was to kill bacteria as they entered the plant, but they have evolved to manipulate certain bacteria to start the nitrogen fixation process. Bacteria that do not tolerate the peptides die almost immediately.

Scientists from Brigham Young University, University of Massachusetts, and Cornell University, as well as collaborators from Hungary and the Netherlands, also contributed to the study.

Zhu's research findings were published in the *Proceedings of the National Academy of Sciences* and can be viewed at [pnas.org/content/early/2017/06/06/1700715114.abstract](https://pubs.pnas.org/content/early/2017/06/06/1700715114.abstract) and [pnas.org/content/early/2017/06/07/1700460114.abstract](https://pubs.pnas.org/content/early/2017/06/07/1700460114.abstract).

Zhu received funding from the USDA National Institute of Food and Agriculture and Kentucky Science and Engineering Foundation for this study. He will continue to study more efficient ways legumes can fix nitrogen. **UK**

>Katie Pratt is an agricultural communications specialist at UK.



COURTESY OF HONGYAN ZHU

Medicago truncatula plants respond differently to soil bacteria depending on the type and quantity of peptides they produce.

UK Ag Equine Programs Holds Summit on Developing Tomorrow's Equine Workforce

University of Kentucky Ag Equine Programs held its second Equine Summit, which focused on developing tomorrow's workforce, on April 26 at Spindletop Hall, in Lexington.

Nearly 100 people, including representatives from five academic institutions across three countries, attended the sessions over the course of the day. Faculty and staff from UK listened as invited panelists offered insights on how educational programs contribute to developing a relevant workforce and engaged in roundtable discussions identifying current industry needs and future trends. The National Thoroughbred Racing Association (NTRA) and the North American Equine Ranching Information Council (NAERIC) sponsored the event.

The summit brought together a cross-section of equine industry leaders, recruiters, and others representing a broad range of organizations. The summit represents a philosophy of collaboration between the UK College of Agriculture, Food and Environment and key industry leaders to identify new initiatives, strengthen existing programs, and advance student professionalism and preparation to join the equine workforce.

Alex Waldrop, NTRA CEO, began the day with his presentation, "Equine industry perspectives: What is the industry and how big is it?"

In his remarks, Waldrop gave industry statistics, from the number of horses to the industry's economic impact and how Kentucky and UK graduates fit into that world. He talked about a highly decentralized gaming policy in the United States, an "explosion" in animal welfare interest, and the challenge scrutiny presents to the industry. How the industry answers those challenges in the coming years will be the key to the racing industry's future, he said.

"The challenge for horse racing and breeding, and for all equine

Equine Summit Recap

pursuits in the 21st century, is not just local, it is not regional and not even national,” Waldrop said. “Our challenge is to think globally about how Kentucky’s rich tradition in equine agribusiness will compete in a very challenging sports gaming and entertainment environment in the coming years. That is what students graduating today from the UK Equine Program need most of all—a broad range of skills and attitudes that will help them participate in rapidly changing international environment for horses and horse-related activities.”

He challenged UK faculty and staff to train students to help create demand for horses and horse sport to ensure a

vibrant industry.

“Do you want to make sure there is always a market for these incredible animals produced in such rich supply here in Central Kentucky?” he asked. “Then start focusing on ways to not only supply the industry with graduates to care for the animals but think about ways to use the UK educational environment to supply graduates prepared to help create demand for these amazing creatures.”

Following Waldrop’s talk, David Switzer, a member of the college’s equine industry external advisory committee, consultant, and longtime advisor to the college, addressed the status of the industry and careers within it.

He touched on the skills graduates will need for a changing world and how the job a graduate might secure

will likely will look very different from the one he or she has a decade or more later. He also touched on increased scrutiny into animal welfare issues and maintained the importance of skills such as communications, mathematics, and business acumen in a diverse industry.

“The summit was a unique opportunity to get input from the equine industry,” said Mick Peterson, PhD, UK Ag Equine Programs director. “Listening to the industry allows us to help guide our graduates into careers in the industry that are impactful. The support of NTRA and NAERIC made this event possible, and we look forward to working with partners both in Kentucky and in the international equine industry as we fine-tune our program.”

The day included four panels focused on segments of the industry. Common themes emerged, including a consensus of the importance of skills in communication, business, information, and technology on top of the core skills students emerge with from UK’s equine undergraduate program. Additionally, an understanding of the industry is considered crucial, as are interpersonal skills and some work or internship experience.

The first panel of the day focused on equine health and nutrition careers and skills. Panelists included Karl Dawson, PhD, vice president and chief scientific officer for Alltech; Derrick Drinnon, regional equine president for Patterson Veterinary; John Francis, vice president and general manager of MWI Animal Health; Jeannie Jeffery, national director of equine sales for Henry Schein Animal Health; Kenton Morgan, DVM, Dipl. ACT, equine technical services veterinarian for Zoetis; Mary Grace Rutland, veterinary field sales manager for Neogen; Deborah Spike-Pierce, DVM, veterinarian and incoming CEO of Rood & Riddle Equine Hospital; Bryan Toliver, senior associate director of equine sales for Boehringer Ingelheim; Brandon Tucker, equine team leader for Zoetis; and Clark Weaver, director of equine for MWI Veterinary Supply.

The second panel focused on racing and breeding careers and future directions and needs within that segment. Panelists included Bryan Cassill, animal resources manager at UK Maine Chance Farm and president of the Kentucky Thoroughbred Farm Managers’ Club;

UNIVERSITY OF KENTUCKY Ag Equine Programs

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

It starts with us.

*The horse is at the heart
of everything we do.*

equine.ca.uky.edu



UK College of Agriculture,
Food and Environment

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

Equine Summit Recap

Matt Koch, co-owner of Shawhan Place Farm; Kenny McPeck, of McPeck Racing, Magdalena Racing Partnerships, and Magdalena Farm; Joe Morris, senior vice president of West Coast Operations for The Stronach Group; and Fred Sarver, owner of Cornerstone Farm.

The third panel's focus was on communications, marketing, and nonprofit development. Panelists included Sarah Coleman, director of education and development for New Vocations Racehorse Adoption Program; Ginny Grulke, executive director of the Appalachian Horse Center of Kentucky; John K. Keitt Jr., CEO, publisher, and editorial director at *BloodHorse*; Glenye Oakford, senior content editor for US Equestrian; Christie Schulte, director of Time to Ride; Chelsea Smith (UK ESMA '12), owner of Smith Equine Media LLC; Patty Tiberg, VP Morris Media Network Enthusiast Group and publisher of *Quarter Horse News*; and Natalie Voss (UK ESMA '10), features writer for *Paulick Report*.

The final panel of the day focused on graduate and professional education and included Emma Adam, DVM, PhD, a freelance consultant and surgeon/internist; Jim Chiapetta, PhD, senior managing IP counsel for Boston Scientific; Stephen Koch, executive director of the NTRA Safety & Integrity Alliance; Jamie MacLeod, VMD, PhD, professor of veterinary science at the UK Gluck Equine Research Center; and Walter Robertson, attorney at Stites & Harbison PLLC.

The UK Ag Equine Programs Summit was created in 2015 in response to UK Ag Equine Programs' 10th anniversary celebration. The first event in April 2015 celebrated the achievements of the first 10 years of the program and set out to refresh existing and establish new research relationships by improving public-private partnerships and explore ideas for new projects. Local equine practitioners and special invite-only organizations met with UK equine researchers to discuss how UK and the industry can better work together and to brainstorm a vision for future endeavors. **UK**

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

Two Types of Horsepower Drive UK Researcher

Carl Mattacola, PhD, ATC, FNATA, is interested in horsepower in all its forms.

As a researcher in the UK College of Health Sciences, Mattacola spearheads the Equine Jockey/Rider Injury Prevention Initiative, a first step toward building a medical model for jockeys like the care offered to athletes in other sports, including hockey, NASCAR racing, or football.

"A horse race is a pretty high-powered event," he said. "You have to be strong and balanced to maintain control of this 1,000-pound horse going about 30 miles per hour.

We spend most of our time focused on the horse, but the rider is an athlete, too, and he or she can benefit from the expertise that we have to offer."

In his off time, he rides horses ... and Harleys.

Watch this episode of "Five Questions" to learn how this grandson of Italian immigrants and son of an educator has parlayed his skills and experience into a groundbreaking effort to help riders of all types. **UK**

>Provided by Laura Dawahare, public relations officer; Amy Jones-Timoney, video production specialist; and Kody Kiser, video production specialist at UK.



Watch the video at uknow.uky.edu/research/video-two-types-horsepower-drive-uk-researcher



Video produced by UK Public Relations and Marketing.

To view captions for this video, push play and click on the CC icon in the bottom right-hand corner of the screen. If using a mobile device, click on the "thought bubble" in the same area.

UK Junior First Recipient of Jockey Club Scholarship

Julianna Witt, a UK equine science and management and animal sciences junior, is the first recipient of The Jockey Club Scholarship.

The Jockey Club Scholarship, which will cover Witt's 2017-18 academic year of studies, provides \$15,000 (\$7,500 per semester) to a student who is pursuing a bachelor's degree or higher at any university and has demonstrated interest in pursuing a career in the Thoroughbred racing industry.

A native of Freehold, New Jersey, Witt plans to graduate with her bachelor's degrees and a minor in agricultural economics in 2019 from the UK College of Agriculture, Food and Environment. A member of the Lewis Honors College and a Chellgren Fellow, Witt's undergraduate research project explores the relationship between broodmare value, stud fee input, and resulting return on investment. Her research mentor is Jill Stowe, PhD, associate professor of agricultural economics.

Off-campus, Witt has worked on several farms preparing horses for and working the sales, as well as spending time as a mare and foal groom. She also volunteers at Old Friends, the Thoroughbred retirement farm in Georgetown, Kentucky. Witt is committed to working in the Thoroughbred industry and is considering applying for



FOR ANIMALS FOR HEALTH FOR YOU

Zoetis is the leading animal health company dedicated to helping you improve every aspect of horse health and wellness, every day. Building on more than 60 years of experience in animal health, Zoetis works to bring you quality vaccines, medicines and services to better understand and address day-to-day horse health care challenges. Learn more at zoetisUS.com.

**West Nile
Innovator**

**Fluvac
Innovator**

**Lepto EQ
Innovator**

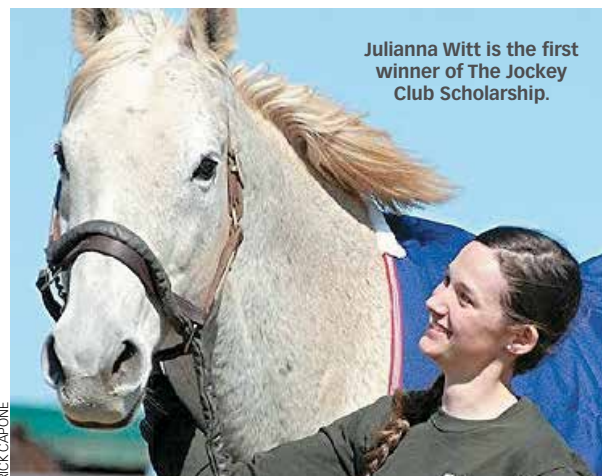
Jockey Club Scholarship

the Godolphin Flying Start program, working at the Irish National Stud, or pursuing a master's degree in equine reproduction after getting her undergraduate degree. This summer she is interning at BloodHorse.

"The Jockey Club is proud to support students who are interested in improving the Thoroughbred racing and breeding industries," said James L. Gagliano, president and chief operating officer of The Jockey Club. "Julianna Witt and Scott Little (winner of The Jockey Club Jack Goodman Scholarship) exemplify the type of people we want joining us in this great sport."

The Jockey Club, founded in 1894 and dedicated to the improvement of Thoroughbred breeding and racing, is the breed registry for North American Thoroughbreds. In fulfillment of its mission, The Jockey Club, directly or through subsidiaries, provides support and leadership on a wide range of industry initiatives, and it serves the information and technology needs of owners, breeders, media, fans, and farms. It is the sole funding source for America's Best Racing, the broad-based fan development initiative for Thoroughbred racing. Additional information is available at jockeyclub.com. **UK**

>Whitney Hale is a public relations officer at UK.



Julianna Witt is the first winner of The Jockey Club Scholarship.

RICK CAPONE

Farm and Facilities Expo Provides Practical Information

On June 8, UK Extension and UK Ag Equine Programs hosted their annual Farm and Facilities Expo at New Vocation's Mereworth Farm, in Lexington. Nearly 200 people attended the free event.

"Everyone at New Vocations was very excited that UK Ag Equine Programs chose our Kentucky facility to host their 2017 field day," said New Vocations education and development director Sarah Coleman. "Not only was it wonderful to welcome guests to the farm who may be unfamiliar with our program, it was especially meaningful to be able to show the public just what UK Ag Extension can offer."

"New Vocations at Mereworth Farm has been helped in so many ways by the staff at UK," she continued. "They have helped us design our barns, assisted in placing our run-in sheds, helped us decipher what weeds and plants we have in our fields, and so much more. What a

gift to be able to show the public a facility on which they have had a direct impact.

"We are also deeply grateful to be able to share with attendees our mission

of rehabilitating, retraining, and rehoming retired racehorses," Coleman said. "Many event-goers did not know the service we provide before touring our facility and meeting our horses; we are so thankful for the opportunity to get the word out about how much these horses have left to give once

they retire from the track."

The Farm and Facilities Expo included a tour of New Vocations, a riding demonstration, and the opportunity to visit many exhibitors, including equine product vendors and educational booths from UK. Following the farm tours and exhibitor visits, the Kentucky Cattleman's Association provided a meal before UK researchers presented rotating educational sessions about various horse management topics.

Bob Coleman, PhD, equine extension specialist and associate professor within UK's Department of Animal and Food Sciences, gave a talk on barn design; Morgan Hayes, PhD, assistant professor within UK's Department of Biosystems and Agricultural Engineering, spoke about farm site planning; Laurie Lawrence, PhD, professor within UK's Department of Animal and Food Sciences, discussed nutrient intake; and Ray Smith, PhD, professor within UK's Department of Plant and Soil Science, spoke on pasture management.

Bob Coleman spoke



Dr. Bob Coleman told attendees to remember the three "Es" when building a barn: easy, effective, and economical.

UK AG COMMUNICATIONS

Farm and Facilities Expo

on the three “Es” of barn design: easy, effective, and economical.

“The ‘easy’ part is related to the horse owner—how they can easily care for their horses on a daily basis,” he said. “Effective is related to the horse. To be effective for the horse has to do with the environment while in the stall (which should be) comfortable with access to feed, water, and interaction with other horses in the barn.”

The last “E,” economical, means making informed decisions as a consumer when buying materials to build your barn. Purchasing the proper products might cost a little extra up front, but will save money in the long run, as those materials will last much longer.

He emphasized that all three “Es” need to be taken into account and that a comprehensive look at all aspects of a barn are vital when designing one.

Hayes’ talk focused on the important concepts of laying out a farm site. “A good layout should provide security, efficiency in performing farm tasks, and a welcoming approach,” she said.

She also stressed the importance of proper planning, explaining that this will ultimately save money and also make the farm a more pleasant place to be.

“New Vocations’ facility is a good example of a well-planned site, as there are multiple entrances and exits to pastures and buildings, efficient use of space, and proper security measures, such as lights and gates around the farm,” she said.

Hayes said two areas in farm site planning that are often overlooked, but are very important, are building proper driveways and water management. Proper

driveways allow for easy access, and well-built ones will not need to be replaced for a long time. Water management materials, such as gutters on buildings and proper drainage, prevent water damage and erosion.

Lawrence provided information on controlling nutrient intake, specifically



To prevent excessive weight gain for horses already at a proper weight, Dr. Laurie Lawrence said attendees should limit their horses’ pasture intake.

while in the pasture and when feeding hay. Lawrence tailored her session to attendees, and this shifted the focus to managing horses who gain excessive weight, as well as managing multiple horses in a pasture that have different needs. Lawrence said high-quality pasture has a fairly high calorie content, especially in the spring and summer, which can cause horses to gain weight quickly. To prevent excessive weight gain for horses already at a proper weight, Lawrence said attendees should limit their horses’ pasture intake.

“There are three basic strategies to limit intake,” she said. “One is to keep the horses in stalls for most of

the day. If pasture is abundant, idle mature horses in good body condition can meet their calorie needs during six to eight hours of grazing per day. Another is to restrict pasture intake with a grazing muzzle. Several different designs are available; select the one that fits your horse the best. The third is to use a drylot.”

For managing the nutrition of pasturesmates with

many aspects of maintaining good horse pasture. He described the importance of a soil test and explained how to collect a sample. He also discussed pasture weed control and demonstrated how to set up an ATV sprayer that could be used on small pastures.

He also touched on overseeding and explained how to seed with a no-till drill. He discussed which grasses are the best for overseeding and how to manage a pasture once you have overseeded it. He referred attendees to UK’s pasture and forage publications for additional information on establishing horse pastures and soil testing.

“The main goal of the workshop was to show basic pasture management strategies that will improve anyone’s pastures, from large Thoroughbred operations to small pleasure horse farms,” Smith said. “The most important point is to provide periodic rest periods for each pasture.”

Added Mick Peterson, PhD, director of UK Ag Equine Programs, “The day was a chance to engage with the broad range of the equine industry in Kentucky, bringing the practical side of research to people who can use the information.”

Bob Coleman echoed that. “The Farm and Facilities Expo at New Vocations provided an excellent opportunity for UK Ag Equine to meet with a great group of horse owners, many we had not had the opportunity to interact with before. The partnership between New Vocations and UK built on both programs to showcase what is available from both groups. It was a great evening visiting with horse people.”

Corporate sponsors included Central Equipment, Equine Equipment, The

Farm and Facilities Expo

Franklin-Williams Company, Kubota, McCauley's, Southern States, Thoroughbred Landscape Products, and Tribute Equine Nutrition. Bevins Motor Company, Central Kentucky Ag Credit, Classic Metal Roofing, Equipoise Mobile, KEEP, Kentucky Thoroughbred Owners & Breeders and Kentucky Thoroughbred Association, Park Equine Hospital, The Pond Lady, Robert, Davis & Sons Hay and Straw Inc., Sodworks, and WinHill Farm Nutrition provided additional support.

"This was another stellar

event for the Equine Farm and Facilities Expo," said Krista Lea, MS, coordinator for UK's Horse Pasture Evaluation Program and one of the event organizers. "The weather was warm and clear, we had a strong list of industry sponsors, and can't thank our host, New Vocations, enough. An event like this takes months of planning and effort from many people, and our county extension agents really helped pull off another great field day. We hope that our attendees enjoyed it as much as we did, and we look

forward to this event again next year."

Founded in 1992, New Vocations is the largest racehorse rehabilitation and retraining center in the country. The organization rehomes off-track Thoroughbreds for second careers after they have retired from the racetrack, and New Vocations offered its new facility for this event. **UK**

>Madeline Regis is a junior marketing student at UK and the communications and student relations intern with UK Ag Equine Programs.

Upcoming Events

July 27, 4-5 p.m.

UK Department of Veterinary Science Equine Diagnostic Research Seminar Series
Topic: Diagnosis of Upper Airway Abnormalities in the Equine Athlete
Speaker: Brett Woodie, DVM, MS, Dipl. ACVS, of Rood & Riddle Equine Hospital
Location: UKVDL, Lexington, Kentucky

July 29

Hats Off Day
Kentucky Horse Park

UK to Host Turf Research Field Day

The UK turfgrass research group will host its annual field day July 13 at the Spindletop Research Farm, in Lexington. Everyone from turf professionals and home owners seeking to improve their lawns are invited to attend.

The field day will begin at 7:30 a.m. with registration and a trade show. Wagon tours of the UK College of Agriculture, Food and Environment research plots will begin at 9 a.m. The four tours will include information about the latest research into insect management and pollinators, golf course turf management, lawn management, and sports turf management. Participants can attend three of the four tours, as all repeat at 10 a.m. and 11 a.m.

The morning concludes at noon with lunch and a trade show.

The cost to attend is \$20 per person through July 7 and \$30 per person after that date.

In the afternoon, participants can attend one of three optional workshops, which will cover sprayer and spreader calibration, weed and grass identification, and disease identification. Each workshop costs \$10 to attend before July 7 and \$20 after that date.

Field day organizers have applied for continuing education units for Kentucky, Indiana, and Tennessee turf professionals



GREGG MUNSHAW, UK TURFGRASS EXTENSION SPECIALIST

Field day attendees can tour the research plots at UK's A.J. Powell Jr. Turfgrass Research Center at Spindletop Research Farm.

for both the field day and the workshops.

Find more information and online registration at www.uky.edu/Ag/ukturf/field%20day.html. **UK**

>Katie Pratt is an agricultural communications specialist at UK.

Download These **FREE** Special Reports Today

■ **Catastrophic Injuries** ■ **Equine Herpesvirus**

Both Sponsored By Zoetis

Others available at
theHORSE.com
YOUR GUIDE TO EQUINE HEALTH CARE