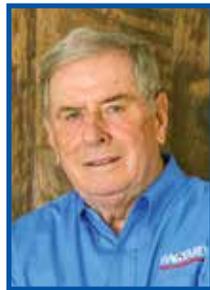


## UK's Maine Chance Equine Campus Facility Renamed to Honor Area Veterinarian

The University of Kentucky Board of Trustees recently approved the official naming of a research facility at UK's Maine Chance Equine Campus as the Dr. Walter W. Zent Mare Reproductive Health Facility to honor Zent, DVM, Dipl. ACT (hon.), a veterinarian and former partner at Hagyard Equine Medical Institute, in Lexington, Ky. Zent served on the Gluck Equine Research Foundation's Board of Directors from 2000 to 2012 and as chair from 2006 to 2012.

"The college is honored to have Walter Zent's name on this research facility. Walter is a successful veterinarian who has not only used research information from the Gluck Equine Research Center but has also contributed to the research," said Nancy Cox, PhD, associate dean for research in UK's College of Agriculture, Food and Environment, Kentucky Agricultural Experiment Station director, and administrative leader for UK's Ag Equine Programs. "He is a



top-notch field veterinarian and a respected contributor to new research-based practices. Not only that, he has been a supporter of the UK's Department of Veterinary Science for many decades including a distinguished leader of the Gluck Foundation Board of Directors."

As the Gluck Equine Research Foundation chair, Zent saw a strong need for increased research in equine reproductive health and a first-class research program with excellent facilities. He helped obtain \$600,000 in private donations, which were matched by the state, for remodeling UK's Equine Reproductive Health Facilities. He and his wife, June Zent, donated to the facilities as well.

"Dr. Zent served the Gluck Equine Research Foundation during a time that saw a change in leadership, expansion of research facilities at Maine Chance Equine Campus as well as financial challenges during the global downturn of the

### Articles of Interest

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economy," said Mats Troedsson, DVM, PhD, Dipl. ACT, director of the Gluck Equine Research Center and chair of the UK's Department of Veterinary Science. "His long-standing association with the Gluck Center, combined with a true passion for advances in equine veterinary medicine and science, made him uniquely suited to lead the Gluck Foundation."

Zent's connection to UK's Department of Veterinary Science spans four decades. He graduated from Cornell University's School of Veterinary Medicine in 1963. After completing a one-year internship at Purdue University, he spent two years at UK's Department of Veterinary Science investigating infectious disease outbreaks and pathology with professors John T. Bryans, Elvis Roger Doll, and James R. Rooney. From 1966 to present, Zent has been an equine practitioner at Hagyard Equine Medical Institute.



The Dr. Walter W. Zent Mare Reproductive Health Facility at UK's Maine Chance Equine Campus.

## Zent Facility

"I can truly say that Walter is one of the most passionate people about the Gluck Center that I know. He has been a great advocate for the faculty and research coming out of the center," said Ed Squires, PhD, Dipl. ACT (hon.), executive director of the Gluck Equine Research Foundation.

Zent is an active member and past officer of many professional equine veterinary organizations on the international, national, and state levels. He has made numerous national and international presentations, written several book chapters, and routinely contributes

articles for publication as requested.

The Zents are involved as owners and breeders in the Thoroughbred horse industry and reside on their farm in Lexington.

A dedication ceremony will be held at 4 p.m. on Oct. 15 at Maine Chance Equine Campus' Barn 26, on Spindletop Way. The event is open to the public. An RSVP to the event can be sent to Jenny Evans at [jenny.evans@uky.edu](mailto:jenny.evans@uky.edu).

The Gluck Equine Research Foundation was formed as a nonprofit organization to provide the exchange of information between the Gluck Center and the horse industry and to secure funds for equine research, endowed faculty positions and facilities.

The mission of the Gluck Center, a University of Kentucky Ag Equine program, is scientific discovery, education and dissemination of knowledge for the benefit of the health and well-being of horses. The Gluck Center faculty conducts equine research in six targeted areas: genetics and genomics, infectious diseases and immunology, musculoskeletal science, parasitology, pharmacology/toxicology and reproductive health.

For more information on the Gluck Center, visit [www.ca.uky.edu/gluck](http://www.ca.uky.edu/gluck). UK

>Jenny Evans, a MFA candidate, is the marketing and promotion specialist senior at the Gluck Equine Research Center.

## Is Your Horse Too Fat? There's an App for That

A recent collaborative project between equine researchers from the University of Minnesota and the University of Kentucky has resulted in the development of an app that helps horse owners better determine their horse's body weight.

Knowing the weight of a horse relative to his breed's ideal weight can help owners better determine their horse's nutritional needs and medication dosage.

Born from equine metabolic research collaborations between UK and University of Minnesota over the past several years, the two sets of university researchers often discussed how the industry needed an easier way to measure a horse's body weight.

"We wanted to come up with a better way to determine a horse's body weight and provide something similar to the BMI (body mass index) measurement currently used in humans," said Bob Coleman, PhD, PAS, associate professor in UK's Department of Animal and Food Sciences and extension horse specialist. "We also wanted a scoring system that wasn't

going to be as impacted by the adiposity (fat deposits) of a horse as the current method of using girth measurement to determine a horse's body weight."

Asked if researchers were successful in developing that something, Coleman's short answer was yes.

"The big thing is that it gets people talking about where they are with their horse instead of guessing. If they want to use technology to do that, they can," Coleman said. "We found that

horse owners were excited to give us the data and more excited when they found out how it could help them manage their horses."

Coleman helped collect data on 629 horses at the Minnesota State 4-H Horse Show and Western Saddle Club Association Championship Show. Owners volunteered their horses for measurement and for those figures to be used as part of the data.

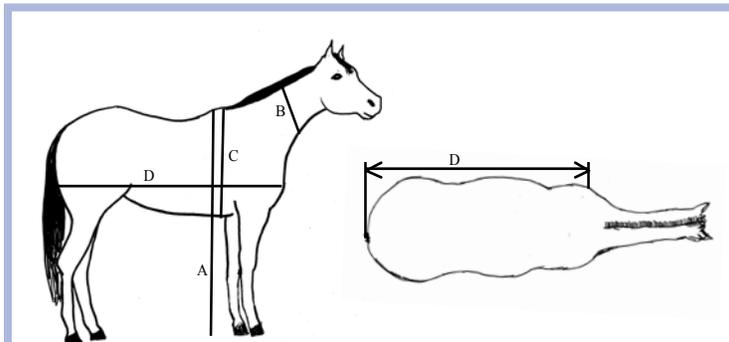
The app, called the Healthy Horse App, is marketed by the University of Minnesota and currently available only on the Apple app store, with plans for compatibility

with android devices soon. It currently costs \$1.99, and according to Coleman, proceeds will be used to help improve the app's functionality in the future.

The app currently works for adult Arabian horses, Miniature horses, ponies, saddle horses (defined as Morgan, Mustang, Paso Fino, Saddlebreds, Tennessee Walking Horses), and stock horses (Appaloosas, Appendix, Paint Horses, Quarter Horses, and Thoroughbreds).

When using the app, Coleman said owners provide measurements, in inches, for their horse's girth circumference, neck circumference, body length (with diagrams showing how to measure from the shoulder to the hindquarters), and height at the top point of the withers. Those measurements are then calculated through formulas developed by university researchers to provide the horse's weight. A comparison ideal weight of that breed is also given, which lets owners see if their horse is over or under the ideal weight for that breed.

The project's team included Coleman; Molly McCue, DVM, Dipl. ACVIM, PhD, associate professor at the University of Minnesota's



Morphometric measurements collected on 629 horses in Minnesota included height at the third thoracic vertebra (A), neck circumference located half way between the poll and withers (B), girth circumference at the base of the mane hairs (C), and body length from the point of shoulder to a line that was perpendicular to the point of the buttock (D).

## Is Your Horse Too Fat?

Veterinary Diagnostic Laboratory; Krishona Martinson, PhD, associate professor at the University of Minnesota Department of Animal Science; Nicol Schultz, DVM, graduate student at the University of Minnesota Department of Animal Science; Aaron Rendahl, of the University of Minnesota School of Statistics; and Krishna Natarajan, graduate student in Computer Science at the University of Minnesota.

More information about the app, the study, and the research can be found at <http://blog.lib.umn.edu/umnnext/news/2013/07/apps-help-horse-owners-manage-hay-cost-horse-body-weight.php> [UK](#)

>Holly Wiemers, MA, is communications director for University of Kentucky's Ag Equine Programs.

## Handling Disease Outbreaks

You hear the raspy cough coming from the third stall, and you wince. Even if you've been careful about preventing infectious diseases on your farm, you know you can't stop them all; disease outbreaks do happen. But what you do next can make the difference in the outcome of that outbreak.

First things first: Consider the risk of the symptom. Certain clinical signs should always raise red flags with owners and barn managers, as they could be early indicators of infectious disease, said Roberta M. Dwyer, DVM, MS, Dipl. ACVPM, professor in the University of Kentucky's College of Agriculture, Food and Environment and director of undergraduate studies in the Department of Veterinary Science.

"Coughing, diarrhea, fever, and neurologic symptoms including behavior changes should all be considered seriously," Dwyer said. "My rule of thumb is that you should consider diseases (especially with these symptoms) to be contagious until proven otherwise."

Certain skin lesions such as round patches of hair loss could also signal something contagious (ringworm, for example), but these diseases are not usually as medically serious, she says.

## MASTHEAD

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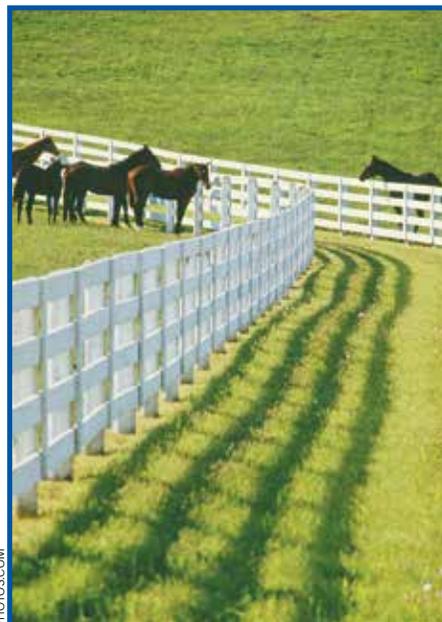
### The Horse: Your Guide to Equine Health Care

Alexandra Beckstett, Managing Editor

Brian Turner, Layout and Design

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](http://TheHorse.com) and sponsor Pfizer Animal Health. It is published monthly to provide up-to-date information on equine research from the University of Kentucky's College of Agriculture. 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](http://www2.ca.uky.edu/equine/bed).

If you suspect an infectious disease, don't panic, but do keep your horse in an isolated area and call your veterinarian immediately.



Separate sick and healthy pastured horses.

In the meantime, take the horse's temperature, pulse, and respiration rates, and look at his gums. If you don't know how to do these things yourself, it could be a good idea to get training for these basic care tasks, Dwyer said. "This is the sort of information you could relay to your veterinarian over the phone on your initial phone call," she said. It's also a good idea to be sure your horses have been trained to easily accept these veterinary measures before they get sick, she added.

Take necessary precautions to prevent further disease spread—in case it does end up being contagious—by using disposable gloves when handling the sick horse, Dwyer advised. Wear coveralls that you keep in front of the isolation stall, and wear disposable booties or rubber boots that can be scrubbed and disinfected. Better yet, designate one person on the farm as caretaker of the sick horse(s) only. And don't use the same equipment on the sick horse that you use on healthy horses—including halters, lead lines, grooming equipment, and even mucking tools like pitchforks,

## Disease Outbreaks

shovels, and rakes—as all of these could transmit pathogens if the horse is actively shedding them.

Horses that are pastured together should be separated from the sick horse even if they're not showing clinical signs, said Dwyer. Bring sick horses up to a barn or shelter away from the other horses, or at the least set up safe, portable fencing to keep the sick horses in a separate area, out of healthy horses' reach. It might seem unnecessary if all the horses have already been exposed to their pasturemate's disease, but separation can still help reduce continued exposure to pathogens.

"A healthy horse might be exposed to a small dose of pathogens and still be able to fight off the infection," she says. "But a healthy horse exposed to an overwhelming dose, even if it's been vaccinated, could still incubate the disease

and develop symptoms. So if you can minimize the contamination in the pasture, that can help."

Once the veterinarian makes a diagnosis, work closely with him or her to understand the specifics of the pathogen itself. "Each pathogen has a different shedding pattern, so quarantines and management need to be left up to the advice of the veterinarian," Dwyer said.

Finally, once the disease outbreak has passed, thoroughly clean and disinfect any housing, equipment, or clothing that came into contact with the sick horse(s) to prevent a renewed outbreak, said Dwyer.

While even the best biosecurity measures can't prevent all outbreaks, knowledge about handling outbreaks once they do happen will ensure the best health possible for all horses involved. **UK**

>Christa Leste-Lasserre is a freelance writer based in Paris, France.

## Gluck Center's Adams Receives Equine Research Grant

Amanda Adams, PhD, an assistant professor of equine immunology at the University of Kentucky (UK) Gluck Equine Research Center, received funding for research focused on

characterizing the geriatric horse's immune system by identifying mechanisms responsible for immunosenescence (gradual deterioration of the immune system due to natural age advancement), "inflammaging," and altered immune responses to vaccination.

Buckeye Nutrition and Waltham funded the project.

"My goal is to improve the health and well-being of the aged horse by identifying interventions that have the potential to improve the function and redox state of the immune system," Adams said.

Adams received her PhD in equine immunology at UK, where she has been employed since 2004. She received a bachelor's degree from Stephens College in Columbia, Mo. Adams is a member of the American Association of Veterinary Immunologists and the American Quarter Horse Association.

Grant recipients have the opportunity to work with Patricia Harris, PhD, director of science for the Waltham Centre for Pet Nutrition, or Amber Moffett, MS, PAS, research and development manager for Mars Horsecare U.S. Inc., as external advisors.

"We have chosen to support research that aligns with our goals of producing quality equine feed to keep horses healthy and happy," Moffett said. "Dr. Adams' research will move senior horse care forward into the future."

For more information or to apply for future Waltham-Buckeye Equine Research Grants, visit [www.BuckeyeNutrition.com](http://www.BuckeyeNutrition.com) or [www.Waltham.com](http://www.Waltham.com). **UK**



Amanda Adams

## Performance Horse Nutrition Subject of Sept. KENA Meeting

The Kentucky Equine Networking Association (KENA) and Alltech are serving up local brews and expert-led discussions on equine nutrition during Equine News and Brews, held Sept. 12, at Alltech's Lexington Brewing and Distilling Co., in Lexington, Ky.

At the September meeting, Laurie Lawrence, PhD, professor in the department of animal and food sciences at the University of Kentucky (UK), will present on performance horse nutrition.

Doors open at 6:00 p.m. The free happy hour provides a forum for members of Kentucky's equine community to hear from experts about the latest news in equine health. Guests will enjoy Alltech's Lexington Brewing and Distilling Co. brews and hors d'oeuvres with two short presentations: a "Sponsor Spotlight" and a "Tips to Use" lecture, focusing on the Kentucky Equine Survey results, presented by C. Jill Stowe, PhD, director of UK Ag Equine Programs.

The keynote presentation, "Selecting The Best Nutrition For Your Performance Horse," with Lawrence begins at 7:30 p.m.

KENA is a program of the Kentucky Horse Council and the UK Equine Initiative. It is an educational and networking dinner series for equine professionals in Kentucky, targeted specifically at those who participate in breeding and reproductive services, instruction, training, boarding, and showing.

The Sept. 12 meeting, while free, is limited to the first 100 registrants. The registration deadline is 8:30 a.m. on Sept. 10. To register visit [www.kentuckyhorse.org/kena-register](http://www.kentuckyhorse.org/kena-register). **UK**



ERICA LARSON

Source: Edited Press Release

## The Role of Interferon-Gamma in Foals

Researchers at the University of Kentucky Gluck Equine Research Center recently linked a foal's environment with its ability to produce interferon-gamma, a key protein in immune response. Interferon-gamma is important to foals because reduced production of it is associated with an increased risk for intracellular bacterial infections, such as pneumonia caused by the bacterium *Rhodococcus equi*.

In humans, exposure to microbial antigens in the environment affects interferon-gamma production through the stimulation of white blood cells (lymphocytes). The Gluck Center researchers examined whether the same process occurs in foals.

"In this study we determined the effect of the foal's environment on its ability to produce interferon-gamma early in life," said David Horohov, PhD, Jes E. and Clementine M. Schlaikjer Endowed Chair and professor at the Gluck Center.



PHOTOS.COM

Interferon-gamma is a key protein involved in foals' immune response.

The research was part of the dissertation project performed by Lingshuang Sun, PhD, while she was a graduate student in Horohov's laboratory. Horohov's team had previously found newborn foals are born with a limited capacity to produce interferon-gamma and that production increases after birth. Because interferon-gamma is a key cytokine in the immune response to *R. equi*, this could explain why adult horses are resistant to this bacterium whereas foals are uniquely susceptible. Increasing interferon-gamma production in foals could prevent mortality and financial losses due to *R. equi* infections, Horohov said.

The study results showed that foals exposed to higher levels of microbial antigens (bacteria and fungi) had increased interferon-gamma production as well as increased lymphocyte numbers, when compared to foals with low exposure to microbial antigens.

Horohov said this is the first data to actually identify a relationship between environment, increased lymphoproliferation, and elevated interferon-gamma expression in foals.

Horohov said the results showed that a foal's environment can influence its ability to produce interferon-gamma early in life, and the effect was associated with an increase in the

## WEED OF THE MONTH

**Common name:** Sandburs

**Scientific name:**

*Cenchrus spinifex* Cav. (field sandbur)

*Cenchrus longispinus* (Hack.) Fern  
(longspine sandbur)

**Life Cycle:** Annual

**Origin:** Native

**Poisonous:** No

Sandbur is the common name for several annual grasses that produce burs with multiple sharp spines. These grasses grow in pastures, landscape beds, gardens, fields, and roadsides. Field sandbur and longspine sandbur are the two most common species, whereas southern sandbur grows primarily in southern states. All are native to the Americas.



AMBER EYCHESON AND DONALD MURRAY, OKLAHOMA STATE UNIVERSITY

Sandburs are particularly problematic at maturity. Because of their sharp burs, they inhibit grazing of desirable grasses and make it difficult for horses to selectively graze around the sandbur. Sandburs are major weeds of bermudagrass hay fields. Infested hay is undesirable because the burs inhibit hay consumption.

Sandburs are annual plants with a fibrous root system that depend on the burs for reproduction (fruit is encased in the bur). Sandburs are easily spread because the burs stick to domestic and wild animals. Though not toxic, the burs can cause mechanical damage if horses consume them.

Sandburs are not easily controlled without killing desirable forage grasses. However, small patches can be removed by hand. Mowing usually is not effective for control or prevention of bur formation. Consult your local [Cooperative Extension Service](#) personnel for control in your area. **UK**

>William W. Witt, PhD, a retired researcher in the department of plant and soil sciences at the University of Kentucky, provided this information.

lymphoproliferative response of these foals. The foals were responding to the microbial antigens, resulting in increased interferon-gamma expression; these data are consistent with the known mechanism of interferon-gamma regulation in other species.

In addition to playing a possible role in resistance to *R. equi* infection, increased interferon-gamma production early in life could also be associated with a reduced risk for developing other diseases.

"There is good evidence in humans that delayed production of interferon-gamma in children is associated with an increased risk for asthma," Horohov said. "We don't know whether this also happens in horses. But it is an intriguing possibility that should be investigated further." **UK**

>Shaila Sigsgaard is an editorial assistant for the Bluegrass Equine Digest.

## Selenium Status' Impact on Equine Antioxidant Factors

How important is the micromineral selenium to antioxidant activity in horses? A University of Kentucky (UK) research team recently set out to answer that question. The team evaluated selenium status' impact on antioxidant factors in mature horses.

Selenium (Se) plays an integral role in many of the equine body's functions, including production of the enzyme glutathione peroxidase, an antioxidant that's vital to preventing and repairing oxidative damage to cells. In horses residing and grazing in selenium-deficient geographic areas (including the Pacific Northwest, Great Lakes, and New England regions of the United States), this antioxidant capacity could be compromised if owners don't provide selenium supplementation. Impaired immunity, elevated blood levels of muscle enzymes, and tying up have all been reported in horses with selenium deficiencies.

In the recent UK study, which took place over 18 months, Mieke Brummer, PhD; Laurie Lawrence, PhD; and colleagues randomly assigned 28 pasture-kept horses (eight mature geldings and 20 nonpregnant, mature mares) to one of four treatment groups: low selenium (LS), adequate selenium (AS), high organic selenium (SP), or high inorganic selenium (SS). The AS horses served



Martin Nielsen, PhD, DVM, PhD, EVPC, assistant professor at the Gluck Equine Research Center, talks with a Hats Off Day attendee about equine parasites. 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, took place July 27 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 seven years.

as controls, and the researchers maintained them on a diet formulated to provide 120% of National Research Council (NRC)-recommended dietary selenium intake throughout the study.

To deplete their selenium stores, the

other three treatment groups consumed a diet consisting of 60% of the NRC's recommended selenium intake for the first 196 days. Blood samples taken during this period confirmed that horses' selenium stores had been depleted.

## Selenium Status

A 189-day repletion phase followed, during which LS horses consumed the same diet as during the depletion phase. The SP and SS horses, however, received 0.3 mg/kg dry matter (DM) of either a commercially available organic selenium and yeast supplement (Sel-Plex, produced by Alltech Inc.) or an inorganic sodium selenite supplement, respectively, top-dressed onto their normal ration. The inorganic form of selenium (sodium selenite) is commonly used in today's horse feeds; however, researchers believe an organic form of the micromineral more closely mimics natural selenium in horses' diets, making it more digestible.

During each treatment phase, researchers took blood samples to analyze for indicators of selenium status, including glutathione peroxidase activity, whole blood Se (how much selenium was found in horses' bloodstreams), antioxidant parameters, and vitamin E concentrations.

**Ask a nutritionist to make a full assessment of total selenium provided by both forage and grain prior to adding a supplement.**

Upon reviewing the results of their analysis, the team found that:

During the depletion phase, both whole blood Se concentrations and glutathione peroxidase activity decreased significantly in the SP, SS, and LS groups. The team noted the whole blood Se levels and glutathione peroxidase activity also decreased in the AS horses during the first 84 days before leveling off, whereas the remaining groups continued to decrease throughout the period.

Data from the repletion phase indicated that glutathione peroxidase activity continued to increase when horses consumed a daily selenium intake above the current NRC-recommended level of 0.1 mg Se/kg dry matter. This indicated that the NRC recommendation might not be adequate to support maximum glutathione peroxidase activity in the horse.

## UK to Host Endocrine and Genetic Disorders Symposium

The University of Kentucky Department of Veterinary Science will host the Endocrine and Genetic Disorders Symposium Nov. 21 at the UK Veterinary Diagnostic Laboratory, located at 1490 Bull Lea Road in Lexington, Ky.

The Endocrine and Genetic Disorders Symposium is open to veterinarians and anyone else with an interest in learning more about these disorders.

The Kentucky Board of Veterinary Examiners has approved continuing education (CE) for veterinarians and veterinary technicians. CE sheets must be signed at the meeting to receive credit.

The symposium costs \$50; those interested in attending should sign up early at [www.egdsymposium.eventbrite.com](http://www.egdsymposium.eventbrite.com), as space is limited. More information, including the schedule, is available on the registration page. **UK**

>Jenny Evans, MFA candidate, is the marketing and promotion specialist senior at the Gluck

At the beginning of the repletion phase, whole blood Se values were similar among the LS, SP, and SS treatment groups; however, within 28 days, the whole blood Se value for the LS group was significantly lower than the AS, SP, and SS groups. Within 154 days, the SP and SS groups had a greater amount of whole blood Se compared to the LS and AS groups. Glutathione peroxidase activity showed a similar but delayed response to that of whole blood Se, meaning the enzyme's values rose at a slower rate. The researchers did not see differences in glutathione peroxidase activity until 56 days after treatments began, compared to 28 days for whole blood Se.

There was no difference in antioxidant parameters between treatments during either phase, and there was no effect of treatment on vitamin E levels during either phase. Vitamin E is another vital component in regulating the horse's antioxidant status and acts concurrently with Se to prevent cellular damage. There is some evidence that suggests adequate dietary vitamin E can negate a selenium deficiency, and the team believes that the lack of effect of dietary selenium supplements on antioxidant status might be due to adequate vitamin E in the diet.

Based on the repletion data, the team ultimately concluded that horses might benefit from greater amounts of selenium in the diet compared to NRC recommendations to increase glutathione peroxidase activity.

So should horse owners add a selenium supplement to their horses' diet?

"Not necessarily," Brummer said. "The objective of this study was to evaluate

the effect of a total dietary selenium intake (meaning that found in both forage and grain) of 0.3 mg Se/kg DM compared to the NRC recommendation of 0.1 mg Se/kg. In other species 0.3 mg/kg is frequently recommended; however, equine data is lacking to support the same amount in horses.

"Many of the commercial horse feeds are formulated to provide enough selenium for a total dietary intake of 0.3 mg/kg," she continued. "Therefore, in the light of (the risk of selenium toxicity), it is extremely important to ask an equine nutritionist (or veterinarian) to make a full assessment of total selenium provided by both forage and grain prior to adding a supplement."

The study, "Measures of antioxidant status of the horse in response to selenium depletion and repletion," will appear in an upcoming issue of the *Journal of Animal Science*. **UK**

>Kristen M. Janicki, MS, PAS, is a performance horse nutritionist for Buckeye Nutrition.

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## Pastern Dermatitis: A Pathologist's Perspective

Inflammatory conditions of the pastern appear with increasing frequency during the summer season. But as a diagnosis, "pastern dermatitis" leaves much to be desired. When this alone is noted on a biopsy report, it leaves the clinician and client with little useful knowledge.

Other names for this condition, with slightly varying clinical appearances, include scratches, mud fever, grease heel, dew poisoning, grapes, canker, and verrucous pododermatitis. But again, these colorful descriptors do not indicate the root of the problem. For that, pathologists rely on a series of modifiers describing the more subtle histologic (microscopic) variations on the theme of "dermatitis," and, just as importantly, a detailed history.

The skin overlying the pastern is not inherently different from anywhere else on the body, (with the exception of having longer hair, if not clipped). As such, the way it reacts to insult is rather or-



Pastern dermatitis can be debilitating.

inary: erythema (redness), erosions, ulcerations, and/or serous exudates in the acute phase of inflammation. Purulent (pus-like) exudate and granulation tissue form with a more prolonged insult, and fibrosis (scarring), epidermal thickening, and hyperkeratosis (scale, cornification) in chronic cases. The pastern, however, is uniquely qualified to develop severe, persistent, refractory skin disease because of its location and exposure to dirt, fecal material, persistent moisture, chemical irritants, ultraviolet rays, and direct trauma (plant stubble, rocks, overreaching/interfering). Draft breeds are more susceptible to pastern skin disease due to heavy feathering and possibly genetic factors.

Veterinarians routinely utilize in-house cytology, skin scrapings, direct microscopic examination of hairs, fungal cultures, and complete blood counts in their diagnostic work-ups for complex skin cases such as pastern dermatitis. In acutely severe cases or cases that are unresponsive to treatment, biopsies offer a direct view of the disease process and can lead to a definitive diagnosis. However, histopathology of inflammatory lesions is only useful when interpreted in light of the clinical history and gross appearance of the lesions. In order to maximize the utility of a biopsy, it is extremely important to take adequately large (6 mm punch) and multiple specimens of active lesions. Providing a detailed description, clinical history, overview of the animal's environment, diet, vaccination history, and overall herd health are also critical as well as good quality digital photographs.

While the treatment will obviously largely depend on the diagnosis, some basic principles are:

- Keep the area clean and dry.
- Monitor for and manage any sign of exuberant granulation tissue (proud flesh).

### Causes of Inflammatory Conditions of the Pastern

The most well-described (though not necessarily the most common) infectious etiologies include:

#### Bacteria

*Dermatophilus congolensis*  
*Staphylococcus aureus*  
Spirochetosis  
Any cause of pyoderma

#### Fungi/yeast/oomycetes

*Pythium* spp.  
*Malassezia* spp.  
Phaeohyphomycosis  
Zygomycosis

#### Parasites

*Chorioptes* mites  
*Pelodera strongyloides*  
*Strongyloides westeri*

#### Non-infectious causes

Contact irritant  
Hypersensitivity  
Drug reaction  
Trauma  
Photosensitization  
Pastern leukocytoclastic vasculitis  
Photoaggravated vasculitis  
Pemphigus foliaceus  
Chronic progressive lymphedema

## UPCOMING EVENTS

### September 4-7

[UK Ag Roundup](#), University of Kentucky, E.S. Good Barn

### September 12

Kentucky Equine Networking Association (KENA) Meeting presented by Alltech News & Brews. Networking 6 p.m., heavy hors d'oeuvres 6:30 p.m., Alltech Brewery, Lexington, Ky. "Selecting the best nutrition for your performance horse," by Laurie Lawrence, PhD, professor in the department of animal and food sciences at the University of Kentucky.

### September 14

3rd Annual Horses and Hope Trail Ride, hosted by Kentucky's First Lady Jane Beshear, Kentucky Horse Park, Lexington, Ky. Registration is now open for the ride and barbeque supper. Proceeds support breast cancer awareness, referral, and treatment services for Kentucky's equine industry workers and their families. For more information about the trail ride and Horses and Hope, go to [www.horsesandhope.org/events.php](http://www.horsesandhope.org/events.php).

### September 26

Department of Veterinary Science Equine Diagnostic Research Seminar Series, 3:30 p.m., Veterinary Diagnostic Laboratory. Seminar I: The Role of Nutrition in Modulating the Immune and Metabolic Responses of Geriatric and EMS Horses, Amanda Adams, PhD, University of Kentucky Gluck Equine Research Center. Seminar II: Nutrition and Disease Interactions: Feeding the Sick Horse, Ginger Rich, PhD, Rich Equine Nutrition Consulting.

- Check the other feet and legs regularly to monitor any disease spread.

If the skin appears to be dry and cracking, oil-based emollients or antimicrobial ointments can help reduce fissuring and secondary infections.

Pastern dermatitis can be a debilitating condition for horses. Correct diagnosis early in the course of disease can greatly expedite its resolution, and most horses will return to function. **UK**

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