

MESSAGE FROM THE GRAYSON-JOCKEY CLUB RESEARCH FOUNDATION

UK GLUCK CENTER AND INDUSTRY LEADERS RESPONDING TO AN UPTICK OF FOAL DIARRHEA CASES

By **HOLLY WIEMERS**

THE FIRST SEVERAL months of the year make up the bulk of the busy foaling season in Central Kentucky, so when the region's farms and equine practitioners began noticing increases of diarrhea in foals ages two- to seven-days old, there was concern.

In response, the University of Kentucky Gluck Equine Research Center is using a portion of its existing Koller Emergency Funds, and the Kentucky Thoroughbred Owners and Breeders Foundation, Grayson-Jockey Club Research Foundation, and Coolmore America are leading an effort to help provide additional funding, allowing research to begin immediately.

"Anytime we recognize an increased incidence in equine health cases, such as foal diarrhea, we prepare and mobilize to further our understanding of the health issue," said David Horohov, chair of the Department of Veterinary Science and director of the Gluck Equine Research Center. "Early detection and rapid diagnostics are at the cornerstone of what drives our research approach."

Foals commonly develop diarrhea a week to 10 days after foaling, and veterinarians and farm owners typically have the experience and tools to respond. According to the American Association of Equine Practitioners, it is important for a veterinarian to evaluate foals under a month old when they experience diarrhea because they can develop life-threatening dehydration in as few as six to eight hours. Neonatal or young foals have a digestive tract, similar to that of humans, where small intestines are responsible for much of their nutrition absorption. Dealing with this type of attack on the small digestive system heavily impacts foals, which is a big reason the Gluck Center will focus its research efforts on this issue.

A significant increase in the illness has

affected some farms while other farms have had few to no cases. In spite of these incidences, UK has not recognized a rise in reported mortality associated with these cases and continues to monitor the situation.

UK College of Agriculture, Food, and Environment researchers have developed a multipronged research plan to help further the understanding of the problem.

One focus is to expand scientists' knowledge of the foal gut environment. This will add to their understanding of neonatal gut bacteria and the effect of antibiotic treatment.

A second part is to study the differences in mares and their foals on farms both with and without early neonatal diarrhea cases and the effect of antimicrobial drug treatment. Researchers will conduct this analysis through gene sequencing to determine an overview of type and diversity of gut microflora.

They will also use the data in this part of the study to gain insight into the effect of antimicrobial use in foals on the development of their gut microflora.

The third prong of the research will investigate a biotherapeutic approach on one farm. That farm is supplementing foals with home-fermented live yogurt instead of a commercial pre/probiotic. Research has shown that *Lactobacillus spp.* bacteria are among the first colonizers in the neonatal gut. Data from other species support *Lactobacillus spp.* as promoting gut health and outcompeting pathogens in gut colonization.

In addition to the studies, the UK Gluck Center and Veterinary Diagnostic Laboratory team has identified further potentially useful tests, including gene sequencing targeting identification of novel viruses and bacteria that might be present.



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With limited Koller Emergency Funds available, the UK Gluck Equine Research Center is thankful for the additional dollars provided by the KTOB Foundation, The Grayson-Jockey Club Research Foundation, and Coolmore America.

"The foundation members met March 15 and felt this research and timing are consistent with the sole mission of responding to threats to the breeding industry in Central Kentucky. We are grateful to Gluck for accessing their emergency funds and everyone for responding so quickly," said Jimmy Bell, chairman of the KTOB Foundation.

"Situations such as these highlight the relevance for a coordinated effort that can be led by our scientists at the Gluck Equine Research Center," said Dr. Stuart Brown, veterinarian, Keeneland equine safety director, and chair of the Gluck Research Foundation. "Our team mobilizes to work with equine practitioners and farms throughout the area, allowing us to further our understanding and develop our approach to work on these types of issues. We appreciate the opportunity to collaborate with other partners to enhance our abilities when issues like this arise."

"We at Grayson-Jockey Club Research Foundation believe in supporting timely equine health for all horses at every stage of their lives, and foal diarrhea is proving to be a concern this year on Central Kentucky farms," said Dell Hancock, chair of the foundation. "We are happy to help facilitate research to address this condition and thank the University of Kentucky's Gluck Equine Research Center for their commitment to the well-being of horses."