2025 USPC Research Project Fair

Presented By

Grayson-Jockey Club Research Foundation

Supported By

THE Equestrian College Advisor

Kentucky Equine Research®
World Leaders In Equine Nutrition

MICHIGAN STATE UNIVERSITY | College of Veterinary Medicine

Mary Anne McPhail Dressage Chair in Equine Sports Medicine

ABSTRACT BOOK

Special Thanks to Our Judges and Organizers

Judges

Shawna Herrala (Virtual & In-Person Fair)

Eben Haber, PhD (Virtual & In-Person Fair)

Candy Tavormina (Virtual & In-Person Fair)

Amy Fidler (Virtual & In-Person Fair)

Cole Wolf, PhD (Virtual & In-Person Fair)

Kathy Selking (Virtual Fair)

Angela Bricker (Virtual Fair)

Lorri Witkowski (Virtual Fair)

Ruth Smith (Virtual Fair)

Jennifer Rupp (In-Person Fair)

Joan Myers (In-Person Fair)

Organizers

Yvette R. Seger, PhD

Candy Tavormina (Local Coordinator)

The 2025 USPC Research Project Fair is Presented By

Grayson-Jockey Club Research Foundation

With Support From

The Equestrian College Advisor

Kentucky Equine Research® World Leaders In Equine Nutrition

Michigan State University | College of Veterinary Medicine

Mary Anne McPhail Dressage Chair in Equine Sports Medicine

Thank You To Our Generous Sponsors!

Individual Literature Reviews

Individual Literature Review #1 (Virtual Fair)

A Look Within: Pill Cameras Changing Equine Medicine

Jocelyn H., HB; C-2 Dressage; C-2 Eventing Phase 1; C-1 Eventing
Tidewater Pony Club (Delmarva Region)

The use of pill cameras, or capsule endoscopy, has revolutionized diagnostic medicine in humans, yet their application in equine healthcare remains underexplored. This literature review examines existing research on the development, application, and limitations of pill camera technology for horses, focusing on their potential as a minimally invasive diagnostic tool for gastrointestinal conditions. A comprehensive review of peer-reviewed articles and veterinary studies was conducted to evaluate key aspects such as the challenges of adapting pill camera design to equine anatomy, the effectiveness of imaging technology, and the practical considerations for implementation in veterinary practice. The findings highlight significant advancements in imaging technology and miniaturization while addressing obstacles such as the size and complexity of the equine gastrointestinal tract. Despite these challenges, the review concludes that pill cameras represent a promising innovation for equine healthcare, with the potential to improve diagnostics and animal welfare. However, further research and technological advancements are necessary to bridge the existing gaps and ensure practical application in the field.

Individual Literature Review #2 (Virtual Fair)

No Sweat? Big Problem!: Anhidrosis

Lydia E., HA; C-2 Eventing
Milton Pony Club (South Region)

To help with thermoregulation, horses have sweat glands. When a horse loses their ability to sweat, the condition is known as anhidrosis. Anhidrosis is more common in hot, humid climates. There are a few theories on treatments for anhidrosis, but it can be managed.

Individual Literature Review #3 (Virtual Fair)

Horse Brain

Isabella E., C-1
Crescent Bay Pony Club (Old Dominion Region)

A research paper

Individual Literature Review #4 (Virtual Fair)

Horses in World War I
Benji S., D-2 HM; D-2 Western
Run O' the Mill Pony Club (Lake Shore Region)

All throughout history, horses have been used in battle. This fall I went to a World War I reenactment and education day, and I wanted to learn more about how horses might have been a part of this war. My presentation will cover how the horses were used in World War I, some of their jobs, how they were cared for, and how World War I changed how horses are used in the military. Horses are such an important part of history!

Individual Literature Review #5 (Virtual Fair)

Should You Remove Wolf Teeth?

Brice D., D-3 HM; D-1 Riding
Liberty Oaks Pony Club (Sierra Pacific Region)

Not all horses have wolf teeth, but if they do, most riding horse owners will have the wolf teeth removed. This practice dates back hundreds of years, but current veterinary recommendation may not be so simple. Wolf teeth could be the cause of behavioral issues in the horse since they can interfere with the bit and cause pain. However, some wolf teeth are small, do not sit next to where the bit sits in the mouth, or fall out as the horse ages. Horse owners should consult with a veterinarian or equine dentist before deciding to remove wolf teeth.

Individual Literature Review #6 (Virtual Fair)

A Retrospective Look at Arabian vs Thoroughbred Breeding

Isabella M., C-1 HM; D-2 Eventing
Royal Riders Pony Club (Southern California Region)

Within the world of horses, there are two main dividing decisions on breeding: Artificial Insemination (AI) or Live Coverage. Artificial Insemination is done through the insertion of semen into a mare and has expanded across many breeds; especially the Arabian. On the other hand, Live Coverage has been seen throughout all of history and has been the backbone of the Thoroughbred breed. As a novel researcher and avid horse enthusiast, I will be delving into the differences, applications, and overall mechanisms between the two. Through a comprehensive literature review intertwined with interviews with the head of breeding at Cal Poly Pomona College, a Kentucky breeding owner of Standardbreds, and the Grayson Jockey-Club Research Foundation, I will offer insight on these two breeding techniques. This entire process has opened my eyes to the hidden intricacies of breeding and motivated me to pursue a career in the breeding and care of horses.

Individual Literature Review #7 (Virtual Fair)

Longevity and the Equine Gut Microbiome

Victoria Z., D-3 HM; D-2 Eventing
Emerald Hills Pony Club (Northwest Region)

The key to the vitality and longevity of horses lies in the equine gut microbiome. Equines uniquely digest food using hindgut fermentation, but this important process relies on having a diverse composition of the microbiota. Different types of microbes provide different functions for horses, such as some for cellulose breakdown, some for nutrient synthesis, and others for lactic acid production. The products of this chemical reaction (e.g. SCFAs) are produced after fermentation, which, when balanced, helps reduce systemic inflammation and prevent common serious health problems like colic or laminitis. Especially in older horses, Dysbiosis, an imbalance of the gut microbes, weakens nutrient absorption causing decreased energy levels and weight loss.

As much as the microbiota within horses impacts them, horses influence their gut system. Even though older horses' microbiomes have decreased diversity, eating high-quality forage, fibers, and probiotics as a supplemented diet will increase their lifespan. Studies have shown that the gut and the brain are connected via the gut-brain axis, and the more stressed your horse is, the worse their performance is. And vice versa: a healthy gut means a more cooperative horse and a robust immune and recovery system. Generally, horses who have maintained the integrity of their gut ecosystem lead longer and happier lives.

Individual Literature Review #8 (In-Person Fair)

EPM: Causes, Symptoms, and Treatment
Nathalie W., D-2 HM; D-2 Hunt Seat Equitation
Charter Oak Pony Club (Red River Region)

Equine Protozoal Myeloencephalitis is a potentially deadly disease that can quickly spread throughout a barn. It seems to be occurring more often than ever. A literature review will help to identify common causes, symptoms, and steps to take if this happens at your barn.

Individual Literature Review #9 (In-Person Fair)

Toxic Plants: A Ticking Time Bomb in Your Pasture

Elaine F., D-3 HM; D-3 Eventing
Foxwood Pony Club (Great Lakes Region)

Pastures at your barn may appear lush and tranquil to the untrained eye, but hidden among the grasses could be dangerous plants that threaten your horses' well-being. These dangers pose significant risks to equine health, making it essential to recognize toxic plants, understand their effects, and determine whether their toxins are treatable or lethal. This literature review will compare plants found in Pony Club International Alliance member countries, including the USA, South Africa, New Zealand, and the UK. The review will also explore prevention strategies that Pony Club members can integrate into their pasture horse management practices. The goal is to educate others about the identification of toxic plants, the effects of toxins on equine body systems, and methods to control toxic plants in pastures.

Individual Literature Review #10 (In-Person Fair)

Mirror, Mirror, on the...Whorl?
Lily A., C-2 HM; C-1 Eventing on the flat; D-3 Eventing over fences
Lead Hound Pony Club (Northern Lakes Region)

We all know about whorls. C-rated teachers tell their students that they can be used to identify their pony in a field. But have we ever considered that there may be a deeper meaning to them? Join me as we reflect and try to reason out the madness.

Individual Literature Review #11 (In-Person Fair)

Women in “Horse”-tory

Aubree Rose S., C-1 HM; C-1 Hunt Seat Equitation; D-3 Western; D-3 Dressage; D-3 Eventing
Run O’ the Mill Pony Club (Lake Shore Region)

Today when we think of famous equestrians, we usually picture Olympians. All throughout history there have been so many famous women whose story would not have been possible without their horsemanship, riding, and horse management skills. For this presentation, I've chosen to discuss women in history that have made a difference, both in the horse world and in the world in general. Using resources such as the National Park Service and The National Women's History Museum, I have researched Sacagawea, Joan of Arc, Annie Oakley, Sybil Ludington, and Marie Antoinette who bring a whole new meaning to "horse girl"!

Individual Literature Review #12 (In-Person Fair)

Unraveling the Equine Microbiome: Investigating Its Impact on Health Outcomes

Claire R., HB; C-2 Dressage
RER Ponies Riding Center (Central New England Region)

It is a widely accepted fact that horses are hindgut fermenters, meaning they digest the majority of their food in the large intestine and cecum via microbes. However, a lesser-known fact is that the horse's microbiome metabolizes around 60% of the energy in a horse's bloodstream. The balance of diverse bacterial species in the horse's gut is crucial in their ability to digest food and gain as much energy from it as possible. Not every species of bacteria is completely beneficial to the horse; some species are simply necessary to control the population of other bacterial species and maintain balance. What happens when there is a microbial imbalance in the gut?

To answer this question, I conducted a literature review using Google Scholar to analyze different scientific studies related to the equine microbiome and the development of equine conditions. The purpose of this literature review was to investigate the correlation between changes in the equine microbiome due to diet or antimicrobial drug use and its effect on the horse's health. My results indicate a statistically significant correlation between changes in bacterial populations and the onset of conditions such as laminitis. These findings emphasize the importance of maintaining a diverse and balanced gut microbiome to maintain the horse's health.

Individual Literature Review #13 (In-Person Fair)

Shipping Safely: Leg Protection While Travelling

Anne Laurel D., HB; C-2 Dressage; C-2 Eventing
Eno Triangle Pony Club (Carolina Region)

Recent studies and innovation has brought a lot of attention to boots and bandages worn by horses while working, leading to a variety of discussions and opinions throughout the equestrian community. However, the only type of leg protection that is constant in every discipline has failed to be included in these conversations: shipping boots and bandages. Though there are limited “correct” Pony Club options, the rest of the horse world uses countless variations of boots, wraps, bandages, or might just leave bare legs when trailering. This literature review is aimed at finding and compiling relevant research to determine which option is actually safest. Sources used include discussion forums (community and professional), scholarly articles, well-known industry distributors, and more.

Individual Literature Review #14 (In-Person Fair)

Lethal White Foal Syndrom

Cadence O., C-1 HM; D-3 Eventing Phase 1; D-2 Eventing; D-3 Dressage
Dune Riders Pony Club (Lake Shore Region)

Review of lethal white foal syndrome, how it is caused and how to prevent it.

Individual Experimental Projects

Individual Experimental Project #1 (Virtual Fair)

Quantifying Impact Resistance: An Experimental Analysis of Force Distribution on Equestrian Helmets Under Simulated Weight Drop Conditions

Madelyn M., D-3 HM; D-3 Dressage; D-2 Hunt Seat Equitation
Endless Mountains Pony Club (Eastern Pennsylvania Region)

This study investigates the impact resistance and force distribution of equestrian helmets by simulating real-world scenarios through a controlled weight drop experiment. A standardized mass is dropped from varying heights onto a series of equestrian helmets equipped with force sensors to measure the magnitude and distribution of the impact forces. The primary objective is to assess the helmet's ability to absorb and dissipate energy upon impact, providing insights into its protective efficacy. The data collected from these tests will contribute to improving helmet design, enhance safety standards, and provide a comprehensive understanding of how different materials and constructions perform under specific impact conditions. This research offers valuable findings for all Pony Club members striving to enhance the safety and reliability of equestrian helmets.

Individual Experimental Project #2 (Virtual Fair)

The Effectiveness of Anthelmintics in Horses

Ella A., D-3 HM; D-1 Riding
Endless Mountains Pony Club (Eastern Pennsylvania Region)

This experiment used FECs (Fecal Egg Counts) to test the effectiveness of ivermectin in deworming horses. The FECs were used two weeks before the horses were treated with ivermectin, two days after treatment, and two weeks after treatment. The standard deviation was 184 two weeks before treatment, 264 two days after treatment, and 280 two weeks after treatment. The experiment showed overall that the ivermectin was 100% effective in the horses used and that there was no resistance from the parasite.

Individual Experimental Project #3 (Virtual Fair)

The Effect of Body Protector Thickness on Force of Impact

Evie M., C-1 HM; D-3 Eventing
River Bend Pony Club (Virginia Region)

The purpose of this experiment was to determine if the thickness of equestrian body protectors reduced the G-force experienced on impact. The international equestrian sport of eventing is in the top ten most dangerous sports in the world, requiring Olympic athletes and the United States Pony Club, as of 1996, to wear a body protector in the cross country phase of competition. However, as of 2024, while body protectors have been rated by the British Equestrian Trade Association (BETA), the American Society of Testing Materials (ASTM), and the Safety Equipment Institute (SEI) as “safe” with different degrees of protection, there are no published metrics on the amount of impact reduction provided by this equipment.

This study hypothesized that body protectors with a greater thickness of foam would have a reduced G-force on impact because thicker material absorbs a greater degree of shock. However, after repeated testing of thin, medium, and thick body protectors this hypothesis was rejected because according to the data, the body protector with medium thickness produced the lowest average G-force at a mean of 20.2 Gs, the thickest body protector model had the second lowest average G-force at a mean of 23.68 Gs, and the thin body protector had the highest average of 27.6 Gs. The results of this experiment were unusual because research conducted on tennis shoes indicated a direct relationship between foam thickness and reduced impact force. With different designs in vests, it is possible that more or less rigid support helped to reduce G-force through something other than foam thickness.

Individual Experimental Project #4 (Virtual Fair)

Beat Beat - Do you Know?
Landon B., D-2
River Hills Pony Club (Southern California Region)

Does grooming a horse get its heart rate back to normal faster?

Individual Experimental Project #5 (Virtual Fair)

Does the Horse's Shoulder Angle Affect Their Performance?

Aiden B., C-1
River Hills Pony Club (Southern California Region)

For this research project I am figuring out if the horse's shoulder angle affects their performance.

Individual Experimental Project #6 (Virtual Fair)

Grooming and Recovery

Rebekah D., D-1
Whitebrook Farm Pony Club (Southern California Region)

The purpose of this project is to observe how grooming will affect the recovery, such as if grooming lowers heart rate or speeds up the process.

Individual Experimental Project #7 (In-Person Fair)

Don’t Be Salty

Emmalee A., D-1
Greenville Foothills Pony Club (Carolina Region)

My goal is to see how feeding loose salt in my horse’s feed could increase his water intake. I used the scientific method to gather research in my barn to prove my hypothesis. After giving salt for two days and recording data and not giving salt for two days and recording data I found that giving salt is beneficial to increasing water intake.

Individual Experimental Project #8 (In-Person Fair)

Does Grooming Reduce Horses' Heart Rate After Exercise?

Andoline H., D-3
Frederick Pony Club (Capital Region)

My research question is: Will horses' heart rate decrease quicker after exercise if I groom them? This experiment will help assess whether grooming impacts horses' heart rate. My hypothesis is if I groom a horse after exercise, then its heart rate will decrease quicker than without grooming. I believe grooming will help decrease the horses' heart rate quicker because grooming tends to help horses' muscles relax. My project is an experimental project because I will be exercising the horses, grooming them, and then measuring their heart rate at different points in time to see if it has changed.

While there are no published studies on the impact of grooming on horses' heart rates, an older study conducted by Lynch et al. states that "Petting elicited a slowing of heart rate" (Lynch 1). Lynch and his colleagues were exploring the impact of human touch on equine heart rate. Another source is a study by Scopa et al. where they found "that horses appeared to feel more relaxed while physically interacting (e.g., grooming on the right side)" (Scopa 1). Even though this source does not specifically say anything about heart rate, we can infer that since the horses seemed more relaxed that their heart rates decreased as well.

In this project, I plan to take horses' heart rate at rest and then take their heart rate after exercise. I will keep taking the horses' heart rate and time how long it takes until their heart rate has gone back down to their resting heart rate. On another day, I will take the horses' resting heart rate again but this time I will groom the horses' and time how long it takes for their heart rate to go down to their resting heart rate.

This project could show how grooming helps in the exercise recovery process in horses. This information could become helpful for athlete horses who compete in rigorous activities and need to recover quickly between phases. For example, in Three Day Events horses need to be cooled down and cleared by the veterinarian within 10 minutes to move on to the next phase of the competition. If my hypothesis is correct then grooming could be added into my own cooling down procedures for my mount and maybe even others at the facility where I ride.

Individual Experimental Project #9 (In-Person Fair)

Alfalfa Hay Field Analysis

Juliana D., HB; D-3 Dressage; D-2 Eventing
Liberty Oaks Pony Club (Sierra Pacific Region)

Nutritional data from five successive cuttings of alfalfa from the same field in the north Central Valley of California were used to determine if the nutrient content of a single alfalfa field varies throughout the year. Five successive cuttings of alfalfa were tested to determine whether the nutrient content changed over the course of the 2024 growing season, looking specifically at TDN, crude protein, crude fiber, sugar, calcium, and other nutrients. I gathered samples from at least three bales of hay per stack which equaled at least 45 bales per cutting that were tested. The results of this experiment are that the cuttings varied in some nutrients while others remained consistent. In conclusion, the cuttings of alfalfa were different which shows that it is important to test each cutting of hay so that you know what you are feeding to your horse.

Individual Experimental Project #10 (In-Person Fair)

Which Type of Boot Traps the Most Heat?

Emma S., C-2 HM; C-1 Dressage; C-1 Eventing; C-1 Hunt Seat Equitation
Keeneland Pony Club (Midsouth Region)

For my research project, I am going to find out which kind of boot traps the most heat.

Purpose

I am doing this project to find out which type of boots trap the most heat. I recently found out that if a boot stays on the horse's leg too long after working, it can cause considerable damage to the tendons in the legs. With the trapped heat and bacteria building up in the legs, the tendons become more susceptible to damage. It is very important that we learn to use boots that trap the least amount of heat.

Hypothesis

My hypothesis is that out of the four boots that I chose, the Woof wear fronts and the Eskadron hinds will trap the most heat, keeping the horse's leg the hottest. Heat and bacteria will be trapped, due to the fact that there is no place for the air to flow. Both the DS mesh fronts and the carbon air hind boots have small holes for the trapped heat to flow out of.

Procedure

1. Tack your horse up,
2. Record temperature of each leg using a digital thermometer
3. Put different kinds of boots on each leg using the DS mesh, Woof wear, Carbon air and the Eskadron.
4. Get on horse and start out at the walk for 5 mins
5. Trot 6 mins each way
6. Canter 2 ½ mins each way
7. Get off horse then take the boots off
8. Immediately record temperature using a digital thermometer for each leg
9. Then cool out your horse

Through my research, I found that the Woof wear fronts are the coolest as they only had a temperature increase of 4.6°F after working. The DS mesh front boot has an average increase of 5.8°F. The Eskadron hinds were the coolest hinds during my research, because they only had an average temperature increase of 5.7°F. while the carbon air had an average increase of 7.5°F . In my view this was a very successful project, even though the results weren't what I expected.

Individual Experimental Project #11 (In-Person Fair)

All In Stride

Aubree Rose S., C-1 HM; C-1 Hunt Seat Equitation; D-3 Western; D-3 Dressage; D-3 Eventing
Run O' the Mill Pony Club (Lake Shore Region)

This fall while studying for my C-1 Horse Management, the conformation block intrigued me. My trainer has always pointed out the different types of conformation between the different ponies in the barn, so this year I decided I would like to find out how different points of conformation affect a pony's stride. I took a sample of USEF Small Ponies, measured various points of conformation (such as their cannon bone and their shoulder) and then measured their stride length in a sand arena. This project is a compilation of those measurements to find which one has the most impact on a pony stride. I would like to thank my friend Maddie for helping me collect my data and my trainer, Emily Elek, for not only being kind enough to let me use her ponies, but also for always encouraging me and helping me through every step of this project.

Individual Experimental Project #12 (In-Person Fair)

Paige's Potion (Homemade Pony Shampoo) vs. Store Brands
Paige R., C-1 Hunt Seat Equitation
Charter Oak Pony Club (Red River Region) and Lead Hound Pony Club (Northern Lakes Region)

Last year I presented this shampoo I made and the judges suggested I conduct more research and continue the project.

Group Literature Reviews

Group Literature Review #1 (Virtual Fair)

Taking the Suspense Out of Suspensory Ligament Injuries

The Abracadabra Twins
Abigail B., C-2 HM; C-1 Eventing, Bluegrass Pony Club (Midsouth Region)
Liliana S., C-1 HM; C-1 Eventing; D-3 Western, Bluegrass Pony Club (Midsouth Region)

This literature review examines detailed articles written by professionals regarding acute injuries to the suspensory ligament in horses. The goal of this is to highlight details that horse owners and riders need to know about suspensory ligament injuries and inform them on why it happens and what the future may look like if it occurs. This uses information that was compiled from many different sources whose titles include sports medicine practitioner, FEI and USEF veterinarian, ISELP (International Society of Equine Locomotor Pathology) member, Equine Rehabilitation specialist, and so many more. It was found that one of the most effective treatment options is to start a rehabilitation program that consists of gradually increasing the horse's daily exercise beginning at 5 minutes of hand-walking until the horse has reached enough progress in healing that it may progress to small amounts of trot work. This work must be carefully monitored and increased very gradually until the horse is cleared by a veterinarian to slowly return to full work.

Although this rehabilitation process is lengthy, there are some additional treatments that may aid in the effectiveness and timeliness of this process that include PEMF (Pulsed Electromagnetic Field therapy, commonly known as Magnawave), ice/cold therapy, hyaluronic acid supplements, Stem cell therapy, PRP (Platelet Rich Plasma) therapy, the application of surpass cream, applying standing bandages, anti inflammatory medications, and many others. Overall, it was concluded that a horse that has experienced an injury to the suspensory ligament must be rehabbed appropriately and may have additional help from other treatments in order to heal the ligament. More details on all of the above topics can be found in the full literature review of the equine suspensory ligament.

Group Literature Review #2 (Virtual Fair)

A Study on Moon Blindness

Isabella and Imani
Isabella M., C-1 HM; D-2 Eventing, Royal Riders Pony Club (Southern California Region)
Imani H., D-2 HM; D-2 Eventing, Whitebrook Farm Pony Club (Southern California Region)

Equine Recurrent Uveitis (otherwise known as Moon Blindness) is both a complex and mysterious disease that has affected many breeds of horses, especially Appaloosas as they are eight times more likely to develop Equine Recurrent Uveitis (ERU) than other breeds. “Uvea” refers to the inner tissue of the eye and “itis” means inflammation, thus inflammation of the eye is the prominent factor for ERU. This autoimmune disease is the most common precursor of a loss of vision in horses and its causes are both based upon genetic and environmental factors. As of right now, there is no cure for this disease. This literature review seeks to discover more about this disease, offering past research, an in-depth interview, and implications for the future in an attempt to combat this blinding and enigmatic force that has hindered horses for far too long.

Group Literature Review #3 (In-Person Fair)

A Literature Review on Equine Digestion and Feeding

Lake Geneva Area Equestrian and Pony Club Center
Rachel S., D-3, Lake Geneva Area Equestrian and Pony Club Center (Lake Shore Region)
Luis A., D-2, Lake Geneva Area Equestrian and Pony Club Center (Lake Shore Region)

Topic of feeding ponies for maintenance and competition. We will review various commercial feed bag labels and hay analysis to learn to balance our ponies' diets.

Group Literature Review #4 (In-Person Fair)

Ingredient Differences in the MSM Supplements

Traverse Bay Pony Club
Marian W., C-1 HM; D-3 Dressage, Traverse Bay Pony Club (Great Lakes Region)
Jacquelyn W., D-2 HM; D-2 Hunt Seat Equitation, Traverse Bay Pony Club (Great Lakes Region)
Lailah D., D-2 HM; D-2 Hunt Seat Equitation, Traverse Bay Pony Club (Great Lakes Region)
Clara M., D-2 HM; D-1 Eventing, Traverse Bay Pony Club (Great Lakes Region)

MSM supplements all share at least one ingredient, but at different doses and with different mix ins. We researched the differences of several different brands of MSM supplements.

Group Literature Review #5 (In-Person Fair)

The Effects and Treatment of Anaplasmosis in Horses

St. Augustine Pony Club
Kimberly C., D-3 HM; C-1 Eventing, St. Augustine Pony Club (Delmarva Region)
Elle C., D-3 HM; D-3 Eventing, St. Augustine Pony Club (Delmarva Region)
Frank C., D-1 HM; D-1 Riding, St. Augustine Pony Club (Delmarva Region)

This literature review explores the causes, signs, diagnosis, and treatment of Anaplasmosis in horses, a tick-borne infectious disease caused by *Anaplasma phagocytophilum*. The review highlights recent findings on the disease's effects on equine health, including symptoms such as fever, lethargy, and in severe cases, organ dysfunction. Diagnostics, such as PCR testing and antibody testing, are discussed, emphasizing their accuracy and limitations. The treatment section focuses on antimicrobial therapies, with doxycycline being the primary drug of choice, as well as other therapies and management strategies. Emerging research on vaccine development and preventative measures will be discussed. The review concludes with a summary of current struggles in managing Anaplasmosis in horses and recommendations for horse owners on prevention.

Group Experimental Projects

Group Experimental Project #1 (Virtual Fair)

Mares vs Gelding Treat Preference
Brier Bank Farm Riding Center
Kaylee R., D-1, Brier Bank Farm Riding Center (North Central Prairie Region)
Kora G., D-2, Brier Bank Farm Riding Center (North Central Prairie Region)
Adler W., D-1, Brier Bank Farm Riding Center (North Central Prairie Region)
Lux H., D-1, Brier Bank Farm Riding Center (North Central Prairie Region)

In our research project, we took different kinds of treats over the course of a few weeks and offered them to multiple mares and geldings to see what their preferences were.

Group Experimental Project #2 (Virtual Fair)

Do Horses Prefer Fresh Carrots or Carrot Flavored Treats?

Freya, Tinley, and Delaney
Freya J., UR, Sandy Creek Pony Club (Rio Grande Region)
Tinley O., D-1 HM, Sandy Creek Pony Club (Rio Grande Region)
Delaney O., Sandy Creek Pony Club (Rio Grande Region)

This project aimed to investigate whether horses prefer fresh carrots or carrot-flavored treats. The experiment involved presenting a group of horses with both options in controlled trials to observe their selection preferences. Over a series of trials, the team recorded the number of times each type of carrot was chosen. Observations were also made about the horses' behavior, including the time taken to make a choice and any patterns in preference. The data was analyzed to determine whether horses show a consistent preference for fresh carrots or carrot-flavored treats. This study provided insights into equine dietary preferences and encouraged researchers to explore scientific methods, animal behavior, and data collection in a fun and engaging way.

Group Experimental Project #3 (Virtual Fair)

Ideal Conformation of Eventers

Sarah and Aly
Sarah F., D-3 HM; D-3 Dressage, Sandy Creek Pony Club (Rio Grande Region)
Aly H., D-2 HM; D-1 Riding, Sandy Creek Pony Club (Rio Grande Region)

Top eventing horses have similar builds, suited for their athletic requirements.

Group Experimental Project #4 (In-Person Fair)

Frolicking Into Footing

Frosty Foals

James M., UR, Brier Bank Farm Riding Center (North Central Prairie Region)
Reagan C., UR, Brier Bank Farm Riding Center (North Central Prairie Region)

We gathered samples of footing from different suppliers by writing to them and having them sent to us. We then bought sand to mix with each sample based on the directions provided. Then we had two control bases of pure sand and local soil. We used horseshoes with weights and dropped them and recorded the results of the imprint.

Group Experimental Project #5 (In-Person Fair)

What is the Best Cleaner to Remove Mildew from Leather Tack?

Painted Palominos
Hayden I., D-2 Show Jumping, Wayne DuPage Hunt Pony Club (North Central Prairie Region)
Hailey I., D-1, Wayne DuPage Hunt Pony Club (North Central Prairie Region)
Cale H., D-1, Wayne DuPage Hunt Pony Club (North Central Prairie Region)
Jordan H., D-1, Wayne DuPage Hunt Pony Club (North Central Prairie Region)

Research Focus

Occasionally leather tack will form mildew on it. We want to find out the best cleaner to remove mildew from leather tack. Multiple cleaners have been suggested and we would like to determine the best one.

Methods and Resources Used

We will try using different cleaners to discover which one removes the mildew from the leather the best. One at a time the different cleaners will be applied to a damp sponge. The sponge will be used to wipe the mildew coved tack and the results will be recorded. The United States Pony Club Manual of Horsemanship was references for recommendations on leather cleaners. Along with personal recommendations from tack store professionals.

Results / Findings

Our main objective of our evaluation was to determine the best cleaner to remove mildew from leather tack. After analyzing the different leather samples following cleaning, we discovered that all the cleaners worked to remove some of the mildew from the leather. However, Lexol ph leather cleaner was the cleaner that removed the most mildew from the leather tack the easiest. Castile soap took the most effort to remove the mildew.

Conclusions

We concluded that Lexol ph leather cleaner is the best cleaner to remove mildew from leather tack.