

Photo by Dr. Jimmy Henning

UK Horse Pasture Evaluation Program 2020 Report

History and Objectives

The UK Horse Pasture Evaluation Program began in 2005 as part of Equine Programs to develop stronger ties with Kentucky's horse industry. The program focuses on the following objectives:

- Providing detailed pasture management recommendations to horse farm owners and managers.
- Improving pastureland by increasing forage quality and quantity and reduce the need for stored feeds, such as hay and grain.
- Assessing the potential risk of fescue toxicity for broodmares on pastures.
- Providing undergraduate students with a new appreciation for agriculture and the horse industry.

By the Numbers

2020 is a year we will not soon forget. And, despite the challenges of the year, the UK Horse Pasture Evaluation Program had another successful year. We were limited in the number of students we could hire, 2 instead of 6, and the laboratories that run our tall fescue endophyte and ergovaline samples were also limited in their capacity. Therefore, participating farms were asked to limit their pasture sampling to just 15 pastures per farm. We want to thank all of our farms for their cooperation and understanding. Because of this, we were able to service all 29 of the farms that signed up this year, which is the highest total since the program started in 2005.

UK Horse Pasture Evaluation Data

	2020	2005-2020
Total Evaluations:	29	280
Total Farm Acres:	8,920	65,859
Acres Evaluated:	2,664	25,735
Total Pastures:	238	3,281
Counties:	9	25

Preparations for the 2021 UK Horse Pasture Evaluation Program sampling

2020 brought many changes to our lives, and the UK Horse Pasture Evaluation Program is no different. Here is a highlight of some of the things that will be different for us in 2021:

- In the summer of 2020, the UK Forage Extension program purchased a GPS enabled handheld device, capable of data input, geotagged photos, and tracking. This upgrade significantly increased the accuracy of GPS data collection, as well as streamlined the data analysis process. With the success of this test run, several more devices will be purchased for the 2021 sampling season and the UK Horse Pasture Evaluation Program will be paperless in 2021!

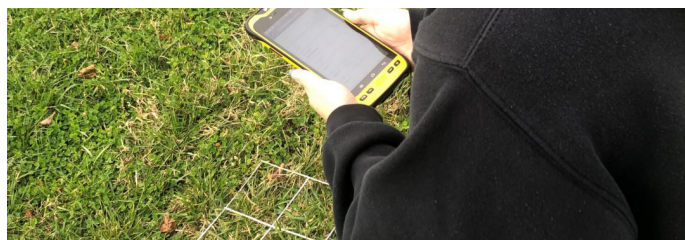
- Based on research from 2019 summer intern Kelsey Hargadon, we have transitioned our sampling method to the "Occupancy Method". This replaces the white PVC squares with metal grids, 30" x 30", that contain 25 smaller squares. For each square, the most dominant species is recorded. This change reduces the person to person variation in our traditional visual evaluation method and also makes training far simpler for new students. Additional research is underway to further validate this method.

- New services in 2021 include Assisted Soil Sampling. Farms requesting this service will receive a soil sampling kit that includes a soil probe, bucket, sample bags and labels, and a map of each field with sample locations marked. Farms will collect soil samples using the included supplies and instructions, and samples will be delivered to the local county extension office to be analyzed by UK Regulatory Services.

The county agent will then provide the soil test results and recommendations to the farm. Our goal is to help farms enrolled in the Horse Pasture Evaluation Program better utilize the services provided by their local extension office. We encourage any farm not enrolled in our Pasture Evaluation Program to contact their local county extension agent for advice on soil sampling and how to submit soil samples in their respective county.

- For larger farms, we will be offering a streamlined sampling method, the UK Horse Pasture Health Score Card. This method provides a quick overview of pasture health with less detailed information than our grid evaluation method. The Pasture Health Score Card provides a useful evaluation option for larger farms on their non-broodmare fields.

- You may now enroll your farm for sampling in 2021 online by visiting <https://forages.ca.uky.edu/EQUINE>.



2020 intern and soon to be graduate student Echo Gotsick testing out the new GPS handheld over an occupancy grid.

Tall Fescue eradication and improved management increases profits for Central Kentucky Thoroughbred Farm

A central Kentucky thoroughbred horse farm experienced a high incidence of fescue toxicosis symptoms in pregnant and foaling mares during early 2017. The UK Horse Pasture Evaluation Program was contacted by the farm at the advice of the consulting veterinarian. After a farm visit, the farm agreed to have their pastures evaluated. Fields were sampled for species composition, endophyte infection level, and ergovaline content.

After being presented results showing damaging levels of infected tall fescue, the farm began an aggressive program of fescue eradication in some fields and complete re-establishment in two others. They also changed their pasture usage for foaling mares in the 2018 season to avoid exposure to toxic tall fescue.

As a result of the accurate information on fescue presence and recommended fescue eradication in selected pastures, the farm was able to avoid exposing pregnant mares to high levels of toxic tall fescue. As a result, the farm experienced no difficulty in foaling (dystocia) and fewer thickened placentas (red bags) and no foal losses due to tall fescue in 2018. Dystocia and thickened placentas are indicators of fescue toxicity in pregnant mares.

Fewer fescue-related foal deaths and associated syndromes resulted in four more live foals and greatly reduced veterinary costs in 2018 compared to 2017. The economic impact of having four more foals was estimated to be \$428,000 using the 2015-17 three-year average Keeneland September yearling sale figures.

Similar results were observed for the 2019 foaling season, during which the farm foaled out approximately 20% more mares. Conservative estimates of the total value of the anticipated foal sales and savings in veterinary costs exceeded \$1,000,000 across both years.

Finally this success was repeated with the 2020 foaling season. The total economic benefit to this farm from adopting UK recommendations exceeds \$1.4 million dollars over the three foaling seasons.

UK Receives National Conservation Innovation Grant for Horse Pasture Work



Webers Retired Horses LLC

May 24, 2019 · 🌐

Here is a nice picture of progress. The water trough shown in the bottom left corner is fed by the new pond. The geldings: Tanner, Cappucino, Chopard, Marcus. Sage, and Jack are grazing in the background on a breezy summer afternoon.



Weber's Retired Horses shared the success of their participation in the 2016 RCPP on social media and will be participating in the 2020 CIG grant.

The University of Kentucky Department of Plant and Soil Sciences was awarded a Conservation Innovation Grant at the beginning of the year to study the ecological and economic impacts of resource conservation on horse farms. Funded by the Natural Resource Conservation Service (NRCS), which is part of the U.S. Department of Agriculture, this project was chosen among proposals nationally, all competing for a select few funding slots, and was fully funded with a budget of more than \$350,000 over three years.

Ray Smith, PhD, professor and extension forage specialist, and Krista Lea MS, coordinator of UK's Horse Pasture Evaluation Program, both members of plant and soil sciences within UK's College of Agriculture, Food and Environment, will lead the project. They have partnered with Jill Stowe, PhD, associate professor in agricultural economics at UK, her graduate student Sarah Sebbane, and Kathryn Payne, PhD, applied forage systems specialist from Virginia Tech.

Smith and Lea plan to visit farms that participated in a previous NRCS cost share enhancement grant in 2016 and collect on-farm measurements such as soil nutrients, plant composition, percent cover, forage quality and yield. Stowe and Sebbane will use the data as well as survey data from these farms to quantify the economic impacts of these improvements.

According to Lea, the research team anticipates some of the economic impacts to include: 1) less hay will be required because improved pastures give higher forage yields; 2) vet

bills will be reduced by the construction of heavy use areas by reducing the incidence of hoof bruises and/or abscesses; and 3) fertilizer requirements will be lower because better manure distribution from improved grazing..

"It might seem difficult to justify the upfront expense associated with adopting conservation practices when it comes to pasture management, especially for non-commercial equine operations," said Stowe. "However, we hope to be able to educate horse farm owners about the economic benefits of adopting these practices through short- and long-run cost savings. By doing so, we can contribute to the increased rate of adoption of these environmentally beneficial practices."

Payne will work closely with UK to implement several practices on five farms in Virginia. In addition, Pennington Seed has agreed to donate seed for use in the Virginia pasture renovations.

"It's easy to say that something only works in Kentucky because of its unique horse industry," Smith said. "Demonstrating these practices and economic benefits in areas with a very different equine population is crucial for having impacts across the country."

"The 2016 grant was a great success, with many more farms interested than we could accommodate, and successful conservation practices implemented. We hope to build on that, and put some real numbers to those practices. The hope is that these practices, and the benefits we can show from them, will encourage other farms to implement them as well," said Lea.

Cost share programs are available to horse farms in Kentucky through NRCS and the Kentucky Governor's Office of Ag Policy. These programs vary by county, so the best way to stay up to date is to have regular contact with your local NRCS and Cooperative Extension offices. Many offer newsletters to keep people informed of approaching deadlines or new programs. NRCS is also currently seeking proposals for on-farm conservation and soil health test projects. Learn more at <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/releases/?cid=NRCSEPRD1555070>.

UK College of Agriculture, Food and Environment through its land-grant mission, reaches across the commonwealth with teaching, research and extension to enhance the lives of Kentuckians.



Thick, lush grasses grow on the renovated pasture at Spendthrift Farm. Photo by Katie Pratt, UK agricultural communications.

Pasture renovations will help horse farm implement rotational grazing

Spendthrift Farm is one of Lexington's iconic Thoroughbred breeding and racing operations. Due to recent expansion, the farm wanted to renovate some unused fields and develop them into pastures to use in a rotational grazing system. They turned to forage experts with the Horse Pasture Evaluation Program in the University of Kentucky College of Agriculture, Food and Environment for their recommendations.

"The Horse Pasture Evaluation Program is a good tool for all horse farms to use," said Robbie Moreland, Spendthrift maintenance manager. "It gives us options and guidelines that we can use to develop the land to suit our needs."

Spendthrift Farm has worked with Krista Lea, UK research analyst, and Ray Smith, UK forage extension specialist, for a number of years to evaluate and renovate fields on their main farm through the program.

"They have done a good job of implementing grazing rotations, as well as removing fescue from some key broodmare fields and having good success with overseeding," Lea said. "This was our first endeavor with them trying to completely re-establish a pasture."

The pasture renovation that began in summer 2019 includes 130 acres of an adjoining property the farm purchased a few years back but had not fully incorporated into their operation.

"The land was physically rough, and the grass was consumed by weeds. We decided the best thing to do was just to start completely over again and develop a grass pasture," Moreland said.

Farm management wanted to establish pastures that were healthy and beneficial for their horses and good for the natural environment. In 2019, they opted to kill off the existing vegetation using tillage, rather than a traditional field burndown with glyphosate. They reseeded the fields with a mixture of bluegrass, orchardgrass and perennial ryegrass. Even though Central Kentucky experienced a drought last fall, the seed germinated and created a lush stand of grass.

"We would like to keep these pastures lush," Moreland said. "To do this, we are going to use it as a pasture rotation with our main farm. The new pastures and barn will be used for our mares and weanlings."

Spendthrift Farm is just one of the farms the Horse Pasture Evaluation Program advises each year. From its beginnings in 2005 to 2019, the program conducted more than 250 evaluations on horse farms of all sizes and breeds. In 2020, Lea and her student interns have evaluated nearly 30 farms. This is the highest number of operations they have serviced in any one year.

The interview with Robbie Moreland and Krista Lea can be found on the UK Forage Extension website at <https://forages.ca.uky.edu/EQUINE>.



Photo by Dr. Jimmy Henning.

Looking Ahead

Enrollments are now being accepted for 2021. Please contact Program Coordinator Krista Lea for more information.

Resources

UK Forage Website: forages.ca.uky.edu

Find your local county extension agent:
extension.ca.uky.edu/county

UK Equine Programs: equine.ca.uky.edu

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