

UKVDL Guidelines for Tall Fescue Sample Collection for Ergovaline Analysis

Ergovaline analyses can be performed on tall fescue forages to determine the levels of endophyte-associated toxins. Testing for other endophyte-associated toxins can also be done, but ergovaline is the toxin of highest concentration and is thought to be the toxin of most concern. This test can be performed at the University of Kentucky Veterinary Diagnostic Laboratory Toxicology section. The cost is \$54 per sample for both in-state and out-of-state samples. Please see the UKVDL website <http://vdl.uky.edu/> for submission forms and shipping information. Samples should be collected when plants have been growing well for at least a month, so early summer is a good time for testing.

Fresh forage sample collection: Each pasture or field should be sampled separately. To collect a sample, randomly select approximately 20 separate sites within a pasture and collect a handful of fescue grass, including the entire plant above ground. Make certain to collect only tall fescue grass, not other grasses or weeds. Walk in a zigzag pattern through the field to get the handfuls of forage. Some suggest walking the field in a W fashion and collecting a handful of pasture grass at the five ends of each "W". Mix the grasses well to make a large composite sample. If a pasture is large, you may want to subdivide the pasture into a few smaller sections, and collect samples for each sub-section separately. Place samples in plastic bags and label each sample with a unique identifier. Put the samples on ice immediately after collection and kept on ice until either shipped or placed in a freezer for storage until time of shipment. Samples should ideally be shipped or delivered to the laboratory the same day as collection. Samples should be shipped on ice by overnight courier, or else delivered directly to the laboratory by the client.

Ergovaline concentrations vary among different fields even with the same grass variety. Levels also vary from season to season and from year to year. Increased fertilization can increase ergovaline concentrations, as can stressful growing conditions. Ergovaline concentrations vary by part of plant, with seed heads typically containing the highest concentrations. The plant base also contains higher ergovaline levels. One batch of samples cannot be considered representative of the field at all times over the year.

Threshold levels of ergovaline have been estimated for horses and for different stages of gestation, but these reflect total dietary thresholds. If a large percentage of the diet consists of fescue-free hay and grain, higher pasture levels of ergovaline might be tolerated. Also, some horses can be very selective in their grazing habits, so levels of toxin determined in the pasture does not necessarily represent the levels ingested by all horses.

We highly recommend that Kentucky horse clients consider enrolling in the **University of Kentucky Horse Pasture Evaluation Program**, which provides ergovaline analyses of pasture forages, as well as assessment of pasture plant species composition, estimated ergovaline intake for horses grazing each paddock, and a number of other services. Please see www.uky.edu/Ag/Forage/HorseLinks.htm or contact Dr. Ray Smith at 859-257-3358 for more information.

Hay or bedding sample collection: Use a hay probe core sampler to collect hay or bedding samples for analysis. A composite sample of multiple core samples from 5-10 bales is appropriate. Mix this composite sample well and place in a paper bag. A separate composite sample should be collected for each field or cutting of hay. Ship the samples in a box to the laboratory; ice packs are not necessary if the hay/bedding is well cured.

Please contact Dr. Megan Romano, clinical veterinary toxicologist at the University of Kentucky Veterinary Diagnostic Laboratory, for more information on tall fescue ergovaline testing: Phone 859-257-8283, e-mail megan.romano@uky.edu.