

Sample collection guidelines for ergovaline testing

Guidelines for tall fescue sample collection for ergovaline concentration analysis

To determine the levels of endophyte-associated toxins in the fescue forage, ergovaline testing can be performed. 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.

Sample collection: Each pasture or field should be sampled separately. To collect samples, randomly select 20 to 30 separate sites within a pasture and cut handfuls of grass at grazing height. Walk in a zig-zag pattern through the field to get samples. Some suggest walking the field in a W fashion and collecting a large handful of pasture grass at each of the five ends of each “W”. Samples for ergovaline testing should be placed 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 be shipped on ice by overnight courier, or else delivered directly to the laboratory by the client. Samples should be collected once plants have been growing well for at least a month, so early summer is a good time for testing.

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. One batch of samples collected at one time 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 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 https://forages.ca.uky.edu/pasture_eval or contact Krista Lea at 859-257-0597 for more information.

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