

Evaluation of Ergovaline and Other Ergot Alkaloids in Tall Fescue Hay Baled at Different Diameters and Stored Indoors or Outdoors

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Problem: Based on several experiences over the last several years, it is increasingly obvious that we do not have a very good handle on concentrations of toxins in endophyte-infected tall fescue hay, nor do we understand how stable or unstable they are over time in storage. Although there are a multitude of variables that could be evaluated within any given study of this type, several major factors, including (outdoor vs. indoor) storage, bale diameter, and sampling depth will be addressed in this initial trial.

Objectives: To evaluate changes in concentrations of ergovaline and other ergot alkaloids in endophyte-infected tall fescue hay harvested in late June, baled in large round bales at three diameters, and stored until February either indoors or outdoors.

Bale #	Block	Diameter	Storage location
1	1	4	Inside
2	1	4	Outside
3	1	5	Inside
4	1	5	Outside
5	1	6	Inside
6	1	6	Outside
7	2	4	Inside
8	2	4	Outside
9	2	5	Inside
10	2	5	Outside
11	2	6	Inside
12	2	6	Outside
13	3	4	Inside
14	3	4	Outside
15	3	5	Inside
16	3	5	Outside
17	3	6	Inside
18	3	6	Outside

Final Sampling. On February 1, 2005 (or thereabouts), each bale will be re-weighed and measured. Subsequently, samples will be taken at three depths (0-6", 6-12", and > 12"). To do this, use a 6" probe for the surface layer, a 12" probe for the transition layer, and at least a 18" probe for the bale core. Sample the surface layer first, and then use the same holes created by the surface sampling to obtain the deeper samples. (This will avoid contamination of samples from the transition level and the bale core with surface or transition material.) Sample the opposite side of the bale from where initial samples were taken in June. [It will take multiple core samples per bale to get enough material for all that we may want to do (150 to 200 grams/ layer/bale would be really good)]. Core samples should be split, handled, and stored as described for the initial sampling date (3/4 to drier, 1/4 to freezer). **Total of 54 samples (18 bales x 3 depths), but each of these will be split - therefore, there will be 54 paper bags and 54 frozen samples.**

In addition to measuring toxin levels as affected by bale diameter, sampling depth, and storage location, we also will be able to measure DM recovery and other quality components as affected by these treatments.



One half of the fescue hay was stored outside to weather and half was stored under a roof. This comparison will also show the effects of weathering on hay quality.



Fescue hay harvested and stored outside. This hay project is monitoring what happens to the endophyte levels and hay quality. Hay was harvested and baled at 3 different bale sizes.