



Crop Science Report

RESEARCH/EXTENSION

SAMPLING TALL FESCUE AND PERENNIAL RYEGRASS SEED STRAW FOR ENDOPHYTE TOXIN ANALYSIS

Pete Ballerstedt¹

Recent concern about endophyte-infected tall fescue and perennial ryegrass seed straw has generated repeated questions about submitting samples of straw for "endophyte testing". Straw samples are analyzed for toxin content, not for endophyte presence. These chemical analyses are only as good as the straw sample provided. In other words, a toxin test will accurately represent a lot of straw only if the sample is truly representative. The following guidelines will insure that the samples are as representative as possible.

Use a core sampler. Commercial forage samplers are available through farm supply sources. You can attach a core sampler to a brace or 1/2-inch drill for easy sampling. Your county Extension agent can help you locate a supplier. Ideally, the sampler should have an interior diameter of 1/2-inch and a sample length of at least 12 inches. Minor deviations from these measurements are acceptable.

Sample a bale by centering the core sampler in the end of the bale and drilling horizontally. Take at least 20 cores (1 per bale) for each lot of hay.

A lot of straw should represent straw from one variety, harvested from the same field. If two lots of straw are in a stack, sample them separately. A truck load of straw may be considered a lot if there is no information to the contrary.

Bales within a lot of straw should be sampled at random. *Random* means that you have no precise reason for selecting or rejecting a specific bale to sample.

¹Pete Ballerstedt, OSU Extension Forage Specialist, Department of Crop and Soil Science, Oregon State University, Corvallis, OR 97331.

Here are two ways to guard against biasing: (1) sample every fourth or fifth bale going around the stack (or truck) or driving down the row in the field; (2) take at least five random samples from each of the four sides of the stack.

Place the entire sample in a polyethylene freezer bag and seal it tightly. Be sure to label the sample with your name, phone number and a sample identification, either on the bag with a **PERMANENT** marker, or on a piece of paper (a business card is ideal) enclosed with the sample.

The necessary analytical procedures for the determination of lolitrem B concentration of perennial ryegrass are not yet available at Oregon State University or elsewhere in North America. Dr. Craig's laboratory staff are working hard to implement this analytical service as soon as possible. A tentative date is October 1, 1991.

The ergovaline concentration of tall fescue seed straw can now be determined at Oregon State University. Properly collected samples should be submitted to the following address:

Dr. Craig's Laboratory
Attention Karen Walker
Oregon State University
College of Veterinary Medicine
Magruder Hall #105
Corvallis, OR 97331

The laboratory phone number is (503) 737-6541 if you have any questions.

The cost is \$35.00 per sample.



Types and Sources of Core Samplers

1. **Forageurs hay probe:**

Forageurs
8500 210th St. W.
Lakeville, MN 55414

Stainless steel probe with resharpenable hardened steel tip. Unit has canister which cores are pushed into after sampling from bale. Canister will hold 20 to 30 cores before it needs to be emptied. Probe cuts cores 0.60 inches in diameter, up to 14 inches long. Designed for use with hand brace, but may be used at slow speed with electric drill. Unit sells for \$92.50 plus shipping.

2. **E-Z probe:**

Techniserve Inc.
1713 SW Hwy 97
P.O. Box 848
Madras, OR 97741

Stainless steel probe with resharpenable tool steel tip. Unit has canister which cores are pushed into after bale is sampled. Canister will hold up to 30 cores before it has to be emptied. Probe cuts cores 0.50 inches in diameter, up to 12 inches long. Designed for use with hand brace. Unit sells for \$98.00 plus shipping.

3. **Penn State forage probe:**

Nasco West
1524 Princeton Avenue
Modesto, CA 95354

Stainless steel probe with replaceable cutting tip. Probe must be disassembled and emptied after each core (depress a button to remove probe end and pull probe apart). Probe cuts core 0.75 inches in diameter, up to 17 inches long. Outside diameter of probe is 1.125 inches. Unit for use with hand brace sells for \$78.00 plus shipping. Unit for use with electric drill sells for \$72.00 plus shipping. Replacement cutting tips cost \$27.90.

4. **Oakfield probe:**

Oakfield Apparatus, Inc.
P.O. Box 65
Oakfield, WI 53065

A heavy stainless steel probe with a replaceable serrated screw-on tip. Hay sample is quickly removed from the side of the tube. Extension rods are available as well as an adapter for 0.5 inch electric drills. Unit sells for \$64.00 plus shipping.

5. **Utah hay sampler:**

c/o Jody A. Gale
595 East 4th North
Logan, UT 84321

Probe has resharpenable serrated hardened steel tip and threaded coring tube that pulls samples into bale. Unit has canister which cores are pushed into after bale is sampled. Canister holds 20 cores. Probe cuts cores approximately 1/2" in diameter and 18" long. May be used with either a hand brace or electric drill. Unit sells for \$90.00 plus shipping.