

Mycotoxin Diagnostic Laboratory



Test	Fees		Suitable For				Other Mycotoxins
	In-state	Out-of-state	Fresh Plants	New Seeds	Old Seeds	Hay	
ELISA	\$20	\$20				X	X
HPLC	\$30	\$30				X	X
Grow-out	\$25	\$35			X		
Microscopy	\$20	\$30	X	X			

Summary Of Information Regarding Fungi And Mycotoxin Tests

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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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Auburn University Mycotoxin Diagnostic Laboratory

The function of the Auburn University Mycotoxin Diagnostic Lab is to detect toxic fungi and their metabolites (mycotoxins) in food and feed samples submitted by the public.

Many types of toxic fungi may cause serious problems for humans and animals. This brochure describes some of these toxic fungi, the tests we use to detect them, and how to submit samples which are suspected of being contaminated.

Toxic Fungi

Toxic Fescue. Tall fescue can be infected with an endophytic fungus which can severely limit beef and dairy cattle production and may cause foaling problems in horses. Our lab uses the microscopy test to analyze fescue plants and seeds for this pest, and the HPLC to analyze fescue hay.

Ergot is caused by a fungus that can infect almost any grass. It produces toxic compounds similar to those produced by the fescue endophyte, and it can also produce similar symptoms in animals. We use HPLC analysis of seed or grain to detect the alkaloids produced by the ergot fungus.

Aflatoxin is the most toxic of the mycotoxins, and can be found in peanuts, corn, cottonseed, and other commodities. Generally we use an HPLC test for this toxin, but there is also an ELISA (antibody) test which we can use for this toxin.

Other Toxins. We can analyze many other toxic compounds using the HPLC and ELISA methods. If you suspect that you have a specific mycotoxin problem, contact us, and we can arrange testing. HPLC and ELISA methods may not be applicable to every toxin.

Types Of Tests

Microscopic analysis works best on fresh plant samples. Seeds can also be tested by microscopic analysis if they are from the current crop year. Microscopic analysis (or microscopy testing) involves taking a thin slice of recently harvested seed or plant tissue, using a staining agent, and preparing a slide. If the fungus is present, it can be detected when the slide is examined under a microscope.

The **growout test** is used for old seed. Seeds are planted, and microscopic analysis is done on the young plants.

The **HPLC** test is used for hay. Here a chemical analysis is used to extract the alkaloids from the hay, and the amount of alkaloids in the sample is measured.

ELISA is an antibody test which is suitable for large numbers of samples.

Sampling And Shipping

For any test to be accurate, the sample must be properly taken.

Because fungi in feed and grain are most often localized in a storage bin, you should take several samples to be sure the sample is representative. Probe the bin or sample several bags. Generally, several hundred grams (about a pint) of grain is sufficient for testing. Once you take the hay or grain sample, keep it dry and mail it immediately to the lab with the enclosed data form. Try to mail early in the week to avoid postal delay over the weekend.

To collect fresh plant samples, take the lowest 3 inches of the stem of the growing plant (no roots or leaves). Or pull the culm (stem below the seed head) off of 50 plants before seeding. Be sure to take only one sample from each of 50 **different** plants. Try to make your sample represent the pasture from which it was taken. In other words, move about and cover the entire field. Pack fresh plant material in a plastic bag with a damp paper towel, keep it from heat, and mail it immediately.



Auburn University Mycotoxin Laboratory Sample Data Form

Name

Address

City

State

Zip

Phone #

Type of Sample:

Test desired:

Date:

Sample name:

Type of Livestock:

Specific Problems:

Mail to:

Mycotoxin Diagnostic Lab
209 Life Science Building
Auburn University, AL 36849

Telephone: (334) 844-1981
Fax: (334) 844-1947

Visit our Web site at: <http://www.ag.auburn.edu/dept/plp/fescue.htm>