If corn ear rots were a problem in the field, it is important to test harvested grain for mycotoxins. Obtaining a representative sample for mycotoxin testing is critical for accurate results. It’s also important to know that testing methods vary in accuracy.

This publication recommends grain sampling and testing methods for detecting mycotoxins.
Sampling Requirements
The accuracy of a mycotoxin test result largely depends on the quality of the grain or silage sample. The USDA Grain Inspection Handbook (www.gipsa.usda.gov/fgis/public_handbooks.aspx) and the Canadian Grain Commission (www.grainscanada.gc.ca) recommend specific sampling methods to ensure that samples accurately represent the grain population. Sample collection methods vary depending on whether the sample is collected from the field (combine), a grain truck, a shipping container, or at the elevator or point of sale.

What does a representative sample consist of?
Although sampling methods vary, the size of the representative sample is consistent. According to the USDA Grain Inspection Handbook, a representative sample is at least 4.4 pounds, and preferably 5 pounds (2-2.5 kg). In many cases, several grain subsamples will be taken and then combined into a single composite sample (Figure 1).

Don’t Rely on Appearance Alone
There are several technologies for testing mycotoxin concentrations in corn grain and silage. Never rely solely on visual methods such as the black light test (Figure 2). Visual test results can be inconsistent, so always test samples using recommended methods, or send them to professional laboratories.

Testing Kits
Several companies sell kits that detect and measure specific mycotoxins. Using such kits will require an initial investment of several thousand dollars to purchase the proper testing equipment. However, once you have the equipment, the cost of testing a single grain sample (a subsample of a larger sample) for one particular mycotoxin is usually less than $10 (Figure 3).
Companies that sell mycotoxin detection equipment and test kits include:

- **EnviroLogix**
  - www.envirologix.com
- **Neogen Corporation**
  - food safety.neogen.com/en/mycotoxins
- **Romer Labs**
  - www.romerlabs.com/us/products/mycotoxins
- **VICAM**
  - vicam.com/products

**Professional Laboratories**

Local laboratories and grain inspection services may test individual corn samples for mycotoxins. Below is an incomplete list of select grain testing providers. Check with your local Extension office for a more complete list of grain testing facilities in your area. For a list of labs in Ontario, visit [www.omafra.gov.on.ca](http://www.omafra.gov.on.ca). Costs and sample submission procedures vary by provider:

- **Barrow-Agee Laboratories** (Memphis, Tennessee)
  - www.balabs.com
- **Cumberland Valley Analytical Services** (Hagerstown, Maryland; Batavia, New York; Zumbrota, Minnesota)
  - www.foragelab.com
- **Dairy One** (Ithaca, New York)
  - www.dairyone.com
- **Dairyland Laboratories** (Arcadia, Wisconsin)
  - www.dairylandlabs.net
- **EMSL Analytical, Inc.** (Baton Rouge, Louisiana; plus locations in Florida, Georgia, North Carolina, and Texas)
  - EMSL.com
- **Eurofins Central Analytical Laboratory** (Forsyth, Georgia; New Orleans, Louisiana)
  - www.eurofinsus.com/food
- **Fort Worth Grain Exchange** (Fort Worth, Texas)
  - 817-626-8213
- **Holmes Laboratory, Inc.** (Millersburg, Ohio)
  - www.holmeslab.com
- **Indiana Animal Disease Diagnostic Laboratory (ADDL)** at Purdue University (West Lafayette, Indiana)
  - www.addl.purdue.edu
- **Indiana Crop Improvement Association (Lafayette, Indiana)**
  - www.indianacrop.org
- **Minnesota Valley Testing Laboratories, Inc.** (New Ulm, Minnesota)
  - www.mvtl.com
- **Quanta Lab** (Selma, Texas)
  - quantalab.com
- **Romer Labs** (Union, Missouri)
  - www.romerlabs.com
- **Trilogy Analytical Laboratory, Inc.** (Washington, Missouri)
  - www.trilogylab.com

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The Crop Protection Network (CPN) is a multi-state and international collaboration of university and provincial extension specialists, and public and private professionals that provide unbiased, research-based information to farmers and agricultural personnel. Our goal is to communicate relevant information that will help in the identification and management of field crop diseases.

Find crop disease resources at [CropProtectionNetwork.org](http://CropProtectionNetwork.org).

**Authors**

- Charles Woloshuk, Purdue University; Tom Allen, Mississippi State University; Martin Chilvers, Michigan State University; Travis Faske, University of Arkansas; Anna Freije, Purdue University; Tom Isakeit, Texas A&M University; Daren Mueller, Iowa State University; Troy Price, LSU AgCenter; Damon Smith, University of Wisconsin; Albert Tenuta, OMAFRA and Kiersten Wise, Purdue University

**Reviewers**

- Gary Bergström, Cornell University; Alyssa Collins, Pennsylvania State University; Andrew Friskop, North Dakota State University; Doug Jardine, Kansas State University; Hillary Mehler, Virginia Tech University; Alison Robertson, Iowa State University and Adam Sisson, Iowa State University

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