Laboratories for Mycotoxin Quantification in Dairy/Livestock Feeds

**Note:** Listing or omission does not imply endorsement nor disapproval of analytical services provided by these or other laboratories. Additional information is available at Internet site: [http://www.michigan.gov/mda/0,1607,7-125-1569_16979_21266-8145--.00.html](http://www.michigan.gov/mda/0,1607,7-125-1569_16979_21266-8145--.00.html) for feed testing laboratories.

### Michigan Laboratories

<table>
<thead>
<tr>
<th>Name and Contact Information</th>
<th>Analytical Services / Methods</th>
</tr>
</thead>
</table>
| **Diagnostic Center for Population and Animal Health**  
Michigan State University  
Thomas H. Herdt, DVM, MS  
P.O. Box 30076  
Lansing MI 48909-7576  
Phone: 517-353-9312  
Fax: 517-355-4582  
herdt@cvm.msu.edu  
www.animalhealth.msu.edu |  
- SEE Panel Below for Specific Mycotoxin testing by MSU’s DCPAH Toxicology Section.  
- Wet laboratory testing  
- Proximate analysis: crude protein, crude fat, crude fiber, moisture  
- Acid Detergent Fiber (ADF), Neutral Detergent Fiber (NDF), Acid Detergent Fiber Insoluble Crude Protein (ADFIP), Neutral Detergent Fiber Insoluble Crude Protein (NDFIP), Lignin, NRC Energy Calculations  
- Minerals  
- Fatty acid profiles, including trans-fats  
- Vitamins A, D, and E |

Details for Mycotoxin Testing: Toxicology Section of MSU’s Diagnostic Center for Population and Animal Health ([http://www.animalhealth.msu.edu/Sections/Toxicology/](http://www.animalhealth.msu.edu/Sections/Toxicology/)) offers various tests that cover naturally-occurring mycotoxins as follows.

The **regular mycotoxin panel** (Order code 70037, $66.00) on 2 lb (as collected) feed samples (e.g., corn, cottonseed, peanuts, sorghum, barley, maize) screens for aflatoxins B1, B2, G1 and G2, zearalenone and vomitoxin (DON). If animal symptomologies or other circumstances indicate applicability, then the rarer mycotoxins T-2 and DAS are included in the assay as a **full mycotoxin panel** (Order code 70037, specify T-2 and DAS, $66.00) at no additional charge. Simply request the **full mycotoxin panel**. If a mycotoxin is detected during screening, it is quantified by the **mycotoxin quantification test** (Order code 70036, $40.00). Screening methods include GC and TLC and confirmation methods include GC/MS and HPLC. Analytical limits of detection are: aflatoxins, 4 ppb; vomitoxin, 400 ppb; zearalenone, 200 ppb; DAS, 400 ppb; and, T-2, 400 ppb.

Ochratoxins are mycotoxin products of certain Aspergillus and Penicillium fungi occurring in corn, barley, rye and wheat. If livestock exhibit renal insufficiency, then the **ochratoxin test** (Order code 70040, $100.00) is recommended. Quantification of the principal compound ochratoxin A is performed by the ochratoxin quantification assay (Order code 70005, $50.00). Screening and confirmation are carried out on HPLC.

**Tremorgenic mycotoxins** can cause tremors, incoordination, weakness and paralysis in cattle, sheep, pigs and horses from consumption of Aspergillus-, Claviceps- and Penicillium-contaminated pasture grass, hay, corn or nuts. The convulsants assay (Order code 70021, $60.00) can be run on stomach contents as well as environmental samples, and analyzes for the mycotoxins penitrem A and roquefortine in addition to rodenticide convulsants strychnine and bromethalin. Screening is by TLC and confirmation is by LC/MS/MS.

**Dicoumarol** is a mycotoxin arising from contamination of sweet-clover hay with Penicillium or Aspergillus species. It is an anticoagulant capable of causing massive hemorrhages in cattle and sheep. Consider ordering the anticoagulant assay (tissue/bait) (Order code 70015, $85.00) and specifying dicoumarol if this mycotoxin is suspected. Analytical methods include HPLC and TLC.
| Litchfield Analytical Services | • Wet laboratory testing  
• Proximate analysis: crude protein, crude fat, crude fiber, moisture  
• Minerals  
• Mycotoxin screening: aflatoxin, vomitoxin (DON), T-2, Zearalenone  
• NIR testing |
|-----------------------------|-------------------------------------------------|

### Out of State Laboratories

<table>
<thead>
<tr>
<th>Name and Contact Information</th>
<th>Analytical Services / Methods</th>
</tr>
</thead>
</table>
| **A & L Analytical Laboratories, Inc.**  
Scott McKee  
2790 Whitten Road  
Memphis, TN 38133  
Phone: 901-213-2400  
Toll free: 800-434-0109  
Fax: 901-213-2440  
[www.allabs.com](http://www.allabs.com) | • Proximate analysis: crude protein, crude fat, crude fiber, moisture  
• Mineral analysis: Al, B, Ca, Cu, Fe, Mg, Mn, P, K, Na, S, Zn  
• ADF, TDN, net energy, ash  
• Mycotoxin analysis: aflatoxin, fumonisin, vomitoxin (DON), T-2 |
| **Anresco Laboratories**  
Jim Bell, Laboratory Director  
1370 Van Dyke Ave.  
San Francisco, CA 94122  
Phone: 415-822-1100x18  
Cell: 415-378-1600  
Fax: 415-822-6615  
[jimbell@anresco.com](mailto:jimbell@anresco.com)  
[www.anresco.com](http://www.anresco.com) | • Pesticide Residues  
• Mycotoxins  
• Minerals  
• Microbiology |
| **Barrow-Agee Laboratories**  
1555 Three Place  
Memphis, TN 38116-3507  
Phone: 901 - 332-1590  
Fax: 901 - 398-1518  
[www.balabs.com](http://www.balabs.com) | • Full range of pet food analyses  
• Proximate analysis: crude protein, crude fat, crude fiber, moisture  
• Vitamin/mineral analyses  
• Mycotoxins: HPLC and screens for aflatoxin, fumonisin, vomitoxin (DON), T-2, zearalenone  
• Pesticide residues  
• Participates in AAFCO Check-Sample Program |
| **Central Analytical Laboratories**  
John Reuther, owner  
2315 N. Causeway Blvd., Ste | • Proximate analysis: crude protein, crude fat, crude fiber, moisture  
• FAP  
• Mycotoxins (ELISA, HPLC and LC-MS-MS)  
• Ag Residues (Japanese MHLW) |
<table>
<thead>
<tr>
<th>Company</th>
<th>Services</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Cumberland Valley Analytical Services, Inc. | - Full service lab with wet chemistry and NIR  
- Mycotoxin Screen (Quantitative): Aflatoxin B1, B2, G1, G2, Deoxynivalenol, Zearalenone, 15 Acetyl-Don, 3 Acetyl-Don, and T-2 Toxin by TLC & HPLC.  
- Vomitoxin or Aflatoxin (by HPLC): This analysis is performed by HPLC. Vomitoxin values reported include DON, 15 Acetyl-DON, and 3 Acetyl-DON with a .5 ppm detection level. Aflatoxin values reported include Aflatoxin B1, Aflatoxin B2, Aflatoxin G1, and Aflatoxin G2 with a 5 ppb detection level.  
- Fumonism (by HPLC): This analysis is performed by HPLC with a detection limit of 0.1 ppm and includes results for Fumonison B1, Fumonison B2, and Fumonison B3. | |
| Dairy One Forage Lab | - NIR and wet chemistry services  
- Forages  
- Grains  
- Byproducts  
- Commercial concentrates  
- In vitro digestibilities (IVTD & NDFD)  
- Fermentation profiles (VFA)  
- Mycotoxins  
- Water analyses  
- Manure analyses | |
| Eurofins Scientific, Inc. (formerly Woodson-Tenent) | - Specializes in the analysis of feeds, pet foods, foods, and nutraceuticals  
- Variety of analyses including amino acids, vitamins, minerals, animal drugs & lipid testing, mycotoxin screenings, microbiological assays and proximate testing, GMO's, allergen testing, meat speciation | |
<table>
<thead>
<tr>
<th>Company</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eurofins US</td>
<td>- Grain grading&lt;br&gt;- Certified for the USDA-APHIS EU Export testing</td>
</tr>
<tr>
<td>Two branch lab locations:</td>
<td></td>
</tr>
<tr>
<td>Petaluma, CA: 707-792-730; New Orleans, LA: 504-297-4330</td>
<td></td>
</tr>
<tr>
<td>Holmes Laboratory, Inc.</td>
<td>- Wet chemistry procedures for all testing&lt;br&gt;- Proximate analysis: crude protein, crude fat, crude fiber, moisture, ash, minerals, etc.&lt;br&gt;- Forage, feedstuffs, commodities, grains, by-products, pet food, companion animal feed, water&lt;br&gt;- ADF, NDF, lignin, multiple component energy equations for ruminants and equine&lt;br&gt;- Microbiological&lt;br&gt;- Quantitative mycotoxins</td>
</tr>
<tr>
<td>3559 U.S. Rt. 62, Millersburg, OH 44654-8834</td>
<td></td>
</tr>
<tr>
<td>Midwest Laboratories, Inc.</td>
<td>- Full range of pet food analyses, including full AAFCO&lt;br&gt;- Complete feed &amp; ingredient analysis, including proximates &amp; minerals&lt;br&gt;- Vitamins, amino acids, fatty acids&lt;br&gt;- Mycotoxins by LC/MS including: aflatoxin, fumonison, ochratoxin A, T-2 toxin, zearalenone&lt;br&gt;Full range of ethanol testing&lt;br&gt;Full service microbiology laboratory&lt;br&gt;Participates in the AAFCO check sample program</td>
</tr>
<tr>
<td>13611 B Street, Omaha, NE 68144</td>
<td></td>
</tr>
<tr>
<td>Minnesota Valley Testing Laboratories, Inc.</td>
<td>- Feed &amp; fertilizer analyses (AOAC methods)&lt;br&gt;- Feed testing services include all major and minor nutrients as well as vitamins and amino acids&lt;br&gt;- GC, HPLC, TLC, GPC, GC/MS analyses&lt;br&gt;- Aflatoxins in feed</td>
</tr>
<tr>
<td>Mike Grob, 1126 North Front Street, New Ulm, MN 56073-0249</td>
<td></td>
</tr>
<tr>
<td>Mowers Soil Testing Plus, Inc.</td>
<td>- Feed and forage:&lt;br&gt;  o NIR Analysis - Recommended only for hay, haylage, corn silage, small grain silage, corn, wheat, soybean meal, oats. Wet chemistry will be run on all other feeds.&lt;br&gt;  o Crude protein, ADF, NDF, Ca, P, Mg, K, TDN, energy, RFV, and moisture&lt;br&gt;- Wet Chemistry - Recommended for quality assurance and samples not listed under NIR&lt;br&gt;  o Aflatoxin screening &amp; analysis (ppb), moisture, crude protein, ADF, TDN, NEL, Na, P, Ca, Mg, K, Fe, Zn, Mn and Cu</td>
</tr>
<tr>
<td>Malcolm Stambaugh, 117 East Main Street, Toulon, IL 61483</td>
<td></td>
</tr>
<tr>
<td>Romer Labs, Inc.</td>
<td>- Mycotoxin analysis and contamination control&lt;br&gt;- Aflatoxins</td>
</tr>
<tr>
<td>Ms. Charla Stone</td>
<td></td>
</tr>
</tbody>
</table>
| **North Dakota State University**  
**Veterinary Diagnostic Lab**  
[http://www.vdl.ndsu.edu/](http://www.vdl.ndsu.edu/) | **Trichothecenes**  
**Fumonisins**  
**Zearalenone**  
**Ochratoxin**

- Commonly test for the full profile of mycotoxins in livestock feeds
- **Mycotoxin Screen (F)**
  - (Vomitoxin, Zearalenone, Aflatoxin, Fumonisin, and 15 trichothecenes)
- **Trichothecenes Screen (F)**
  - (Vomitoxin, Zearalenone, and 15 other trichothecenes; GC/MS)
- **Aflatoxin Only (B1, HPLC)** *
- **Aflatoxin Only on forages**
- **Fumonisin Only (B1, HPLC)**
- **Vomitoxin Only (GC/ECD, GC/MS)**

- Aflatoxin B2, G1, and G2 quantitated on request.
- Research and Forensic sample charges must be negotiated.
- Rush Charge $20.00 per feed sample. (Call the lab for multiple samples)
- Download: [Mycotoxin Analyses Request Form](#)

| **Sure-Tech Laboratories**  
**Bill Shakal**  
2435 Kentuckey Avenue  
Building 9  
Indianapolis, IN 46221  
Phone: 317-243-1502  
Toll free: 800-266-7176  
Fax: 317-243-1527  
suretechadmin@landolakes.com | **Complete Feed and Ingredient Analysis**
- Mineral tests
- **Mycotoxins:**
  - Aflatoxin, Zearalenone (F2), Vomitoxin (DON), T2, Fumonisin
- Forage analysis
- Manure testing

| **Trilogy Analytical Laboratory, Inc.**  
**Carrie Maune**  
111 West Fourth Street  
Washington, MO 63090  
Phone: 636-239-1521  
Fax: 636-239-1531  
carrie@trilogylab.com  
[www.trilogylab.com](http://www.trilogylab.com) | **Quantitative Mycotoxin testing for over twenty toxins including Aflatoxins, Vomitoxin (DON), Zearalenone, Fumonisins, T-2, Ochratoxin, and others.**
- Microbiological Methodology
- Vitamin assay
- Certified Mycotoxin Reference Materials
- Certified Mycotoxin Standards