



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

### **Hardin County Extension News Release**

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### **Gibberella Ear Rot and Vomitoxin in Corn**

*Hardin County* – If your grain was harvested from a field with Gibberella ear rot (GER), it is more than likely contaminated with mycotoxins. Deoxynivalenol, also known as vomitoxin, is one of the mycotoxins most commonly produced by the fungus *Fusarium graminearum* that causes GER. Another name for this fungus is *Gibberella zeae*, hence the name of the disease.

Before storing grain harvested from GER-affected fields or areas where conditions were favorable for the disease, pull a sample and test for the presence and level of contamination with vomitoxin. Mycotoxin tests are either qualitative, semi-quantitative, and quantitative. Qualitative tests provide a yes/no answer for the presence of the toxin and are useful for initial screening. Semi-quantitative tests estimate whether the toxin is at or above certain levels (>5 ppm) or within a given range, whereas quantitative tests provide more precise estimates of contamination.

There is a trade-off between precision, price, and speed. Quantitative tests tend to be the most precise but are also more expensive and take longer to complete than the qualitative or semi-quantitative tests. Semi-quantitative quick-test kits are very common and relatively easy to use and inexpensive. They are often very specific for one particular toxin. A test developed specifically for Aflatoxin or Fumonisin will NOT work for vomitoxin.

Unfortunately, there are no commercially available treatments to reduce vomitoxin levels in stored grain. Poor storage may cause toxin levels to increase. Warm, moist pockets in the grain promote mold development, causing the grain quality to deteriorate and toxin levels to increase. Aeration is important to keep the grain dry and cool. However, it should be noted that while cool temperatures, air circulation, and low moisture levels will minimize fungal growth and toxin production, these will not decrease the level of toxin that was already present in grain at the time of storage.

Dry and store harvested grain to below 15% moisture or lower to minimize further mold development and toxin contamination in storage. Store dried grain at cool temperatures (36 to

44°F) in clean, dry bins. Moderate to high temperatures are favorable for fungal growth and toxin production. Periodically check grain for mold, insects, and temperature. If mold is found, send a grain sample for mold identification and analysis to determine if toxins are present and at what level. Clean bins and storage units between grain lots to reduce cross-contamination.

Several companies sell test strips for mycotoxin analysis, including Romer Labs (<http://www.romerlabs.com>) and Neogen (<http://www.neogen.com/>). These tests are fairly easy to use once you read and follow the manufacturer's guidelines carefully.

More information on sampling, testing, and storage can be found in factsheet # PLPATH-CER-04 (<http://ohioline.osu.edu/factsheet/plpath-cer-04>).

*Article written by Pierce Paul, OSU Extension-Corn & Wheat Disease Specialist and edited by Mark Badertscher, OSU Extension-Hardin County.*