

Corn Ear Molds Make An Appearance In Western Illinois

URBANA, ILL.

Corn ear molds have been observed at the Northwestern Research and Education Center in Monmouth, said Angie Peltier, University of Illinois Commercial Agriculture Extension educator.

"In plant pathology, we like to talk about the disease triangle," Peltier said. "Not only must a susceptible hybrid and the pathogen be present, but weather conditions must be conducive for disease development."

While moderate temperatures and moist weather favor Gibberella and Diplodia ear molds, the hot, dry weather experienced this year favor Aspergillus and Fusarium ear

traits can reduce your risk of Aspergillus ear mold, she added.

Fusarium ear mold is caused by the fungus *Fusarium verticillioides* and other *Fusarium* species. The fungus survives on crop residue, and infection occurs primarily through silks and insect damage.

"Symptoms include a distinct 'starburst' pattern of streaks radiating from the top of kernels and occur close to ear tips," she said. "Signs of the fungus include cottony fungal growth that ranges from white to pink in color."

Some *Fusarium* species produce mycotoxins called fumonisins, which can be toxic or fatal to livestock.

Disease control includes planting disease-tolerant hybrids, crop rotation, residue management, and insect control through Bt traits, she said.

To scout for ear molds, peel back the husk leaves from the ears of several plants and look for mold from several locations in your field. If mold is observed, proper diagnosis can determine the risk of mycotoxin contamination. Peltier explained that some ear mold fungi produce mycotoxins and some do not.

Proper diagnosis can be obtained from the U of I Plant Clinic.

Visit web.extension.illinois.edu/plantclinic for more information.

"Unfortunately, once mycotoxins are present in grain, they are not broken down by the drying process," Peltier said.

"However, there are several actions that you can take to stop the production of mycotoxins."

1. Use clean grain bins and store contaminated grain separately.

2. Set your combine to kick out light kernels and clean your grain before storage.

3. If you anticipate large-scale infections, harvest at higher moisture (25 percent) levels and dry at high temperatures to 18 percent for short-term storage and 15 percent for long-term storage as soon as possible to stop fungal growth and the potential for additional mycotoxin production.

4. If you suspect *Aspergillus* ear mold, dry grain to 14 percent moisture. After drying, cool grain to 30°F as soon as possible to retard fungal growth.

"Test your grain to get an accurate measurement of the mycotoxin concentration," she said. "This will help in determining how the grain can be used."

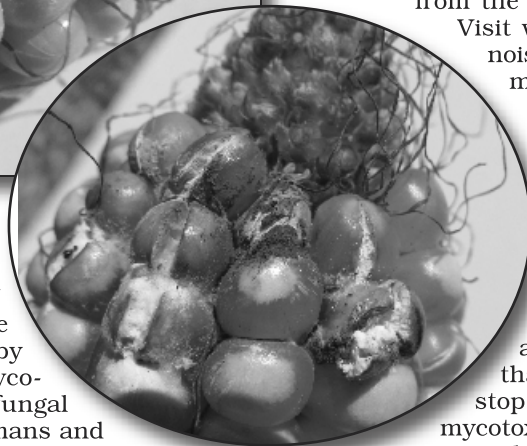
Contact the Illinois Department of Agriculture – Centralia Animal Disease Laboratory for mycotoxin testing at www.agr.state.il.us/AnimalHW/labs/centralialab.html.

For more information on corn ear molds, read the Sept. 8 edition of *The Bulletin* at bulletin.ipm.illinois.edu. Δ

Bottom Right: Example of Aspergillus

Below: Example of Fusarium

Photos provided by Angie Peltier, U of I Extension



molds, she said.

"Although ear molds fungi can reduce yield by consuming grain dry matter, of far greater importance are the mycotoxins produced by these molds," she said. "Mycotoxins are by-products of fungal growth that are toxic to humans and other animals."

Aspergillus ear mold is caused by two fungal species called *Aspergillus flavus* and *Aspergillus parasiticus*. The fungus survives and sporulates on infected crop residue. Fungal spores are disseminated through the air and can infect kernels by either growing down the silk channel or through insect feeding wounds, she said.

"Signs of *Aspergillus* should be easy to see and most often develop near the ear tip due to insect feeding or anywhere where the ear has been damaged," Peltier said. "*Aspergillus* produces a very powdery grey-green mold growth on and around kernels."

Peltier said the presence of *Aspergillus* ear mold indicates that there is the potential for mycotoxin contamination. Some strains of *A. flavus* and *A. parasiticus* produce a mycotoxin called aflatoxin that is toxic to liver tissue and is carcinogenic.

Disease control includes residue management, such as chopping and/or burying residue to aid in decomposition. Minimizing stress in corn plants by planting drought-tolerant hybrids, irrigating, adequately fertilizing the soil, and controlling insects through Bt

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