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Wet Wisconsin: Moldy Corn and Crop Insurance

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Damon L. Smith, Plant Pathology, UW-Madison/Extension
(405) 334-1975, dlsmith26@wisc.edu, http://fyi.uwex.edu/fieldcroppathology/
Paul D. Mitchell, Agricultural and Applied Economics, UW-Madison/Extension
(608) 265-6514, pdmitchell@wisc.edu, http://www.aae.wisc.edu/pdmitchell/extension.htm

It's been a warm and wet summer and flooding has recently hit many areas hard in Wisconsin. Due to the heavy moisture we have seen during the 2016 growing season, Wisconsin farmers should be especially aware of moldy corn this year. Molds can cause serious problems if fed to livestock and can be food safety problems in the supply chain. Buyers will also be looking for moldy corn and other quality problems; ear rots have been reported, as well as some grain sprouting on the ear. For those with crop insurance, quality losses due to moldy corn can trigger indemnities if losses are large enough. Farmers suspecting losses due to moldy grain should contact their crop insurance agents before they harvest. The company will follow-up and tell you how to proceed.

Corn Ear Rots and Mycotoxins

Ear rots caused by fungi in the groups *Diplodia*, *Fusarium*, and *Gibberella* will be the most likely candidates in 2016. *Fusarium* and *Giberrella* are typically the most common fungi on corn ears in Wisconsin. This group of fungi not only damage kernels on ears, but can also produce toxins called mycotoxins. These toxins (fumonisins and vomitoxin) can threaten livestock that are fed contaminated grain. Thus grain buyers actively test for mycotoxins in corn grain to monitor mycotoxin levels to be sure they are not above certain action levels established by the U.S. Food and Drug Administration (FDA).

The FDA has established maximum allowable levels of fumonisins in corn and corn products for human consumption ranging from 2-4 parts per million (ppm). For animal feed, maximum allowable fumonisin levels range from 5 ppm for horses to 100 ppm for poultry. Vomitoxin limits are 5 ppm for cattle and chickens and 1 ppm for human consumption.

Diplodia ear rot does not produce mycotoxins, but can damage grain. This disease is often more severe in years where dry weather precedes silking, followed by wet weather immediately after silking. While this disease does not result in mycotoxin accumulation, it can cause grain yield loss and quality issues.

For more information about ear rots and to download a helpful fact sheet produced by a consortium of U.S. corn pathologists, visit this webpage: http://cropprotectionnetwork.org/corn-diseases/ear-rots/. For more information on mycotoxins and to download a fact sheet, visit this webpage: http://cropprotectionnetwork.org/corn-diseases/mycotoxin-faqs/.

Reducing Mycotoxin Risks

Before harvest, farmers should check their fields to see if moldy corn is present. Similarly, during harvest they should carefully monitor the grain for mold. If substantial portions of fields appear to be contaminated with mold, it does not mean that mycotoxins are present and vice

versa. Appropriate grain samples should be collected and tested by a reputable lab. Work with your corn agronomist or local UW Extension agent to ensure proper samples are collected and to identify a reputable lab. If tests show high levels of mycotoxins in grain, that grain SHOULD NOT BE BLENDED with non-contaminated corn.

Helpful information on grain sampling and testing for mycotoxins can be found here: http://cropprotectionnetwork.org/corn-diseases/grain-sampling-mycotoxin-testing/.

If you observe mold in certain areas of the field during harvest, consider harvesting and storing that corn separately, as it can contaminate loads and the fungi causing the moldy appearance can grow on good corn during storage. Harvest corn in a timely manner, as letting corn stand late into fall promotes *Fusarium* ear rot. Avoid kernel damage during harvest, as cracks in kernels can promote fungal growth. Also, dry corn properly as grain moisture plays a large roll in whether corn ear rot fungi continue to grow and produce mycotoxins. For short term storage over the winter, drying grain to 15% moisture and keeping grain cool (less than 55F) will slow fungal growth. For longer term storage and storage in warmer months, grain should be dried to 13% moisture or less. Also, keep storage facilities clean. Finally, mycotoxins are extremely stable compounds: freezing, drying, heating, etc. do not degrade mycotoxins that have already accumulated in grain.

For more information on properly storing grain and to download a fact sheet on the subject, visit this webpage: http://cropprotectionnetwork.org/corn-diseases/storing-mycotoxin-affected-grain/.

Crop Insurance Rules

Quality losses due to moldy corn are insurable losses for those with crop insurance, but to claim indemnities, growers must follow crop insurance rules. If you suspect mold issues, contact your crop insurance agent before harvesting, storing or selling the corn. The key is to communicate with your crop insurance agent before harvesting. Your crop insurance agent will tell you how to proceed. Samples will have to be collected by a third party, such as a crop adjustor, plus many grain elevators will collect and store grain samples short-term for crop insurance purposes for loads with discounted prices due to low quality. Also, growers may be asked to leave un-harvested rows for crop loss adjustors to use to determine indemnities. If fumonisin or vomitoxin tests indicate contamination above safety limits, insured growers following proper procedures will be compensated for the reduction in value of the grain if it is large enough to trigger insurance indemnities. An issue some farmers will face this year is that small price reductions due to grain quality problems will not be enough to trigger crop insurance indemnities when combined with above average yields.

For More Information

Contact your crop insurance agent with specific questions regarding your crop insurance coverage. Contact your local UW Extension agent or the authors with questions or for more detailed information.

For a list of laboratories that can test corn grain for mycotoxins, consult Table 2-16 in UW Extension publication A3646 – Pest Management in Wisconsin Field Crops: https://learningstore.uwex.edu/Assets/pdfs/A3646.pdf.