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Corn harvest is beginning throughout Wisconsin and should proceed quickly with the projected dry weather. Though the USDA estimates that the state average yield will be 130 bu/ac, yields have been varying greatly from one location to the next. Some growers will find themselves with decent yields and good test weights, and so they may feel no need to contact their crop insurance agent. However, due to the moisture and heat stress with the drought of 2012, Wisconsin farmers should be especially aware of moldy corn this year, for the health of their livestock and food safety. Buyers will also be looking for moldy corn; we have already heard reports of loads of corn being rejected due to mold and mycotoxin contamination.

Quality losses due to moldy corn are insurable losses for those with crop insurance, even if the total harvested yield will not trigger an insurance indemnity. Appropriate grain samples have to be collected and tested before harvest. Farmers suspecting losses due to moldy grain should contact their crop insurance agents before they harvest, otherwise they may forfeit crop insurance indemnities for quality losses.

### **Corn Molds and Mycotoxins**

*Aspergillus* species and *Fusarium* species are fungi that cause molds and produce mycotoxin problems in corn. Both are very common in nature. *Aspergillus* species tend to grow best between 80 and 100 degrees F, with 85% relative humidity and grain moisture of 18%-20% also favoring fungal growth and aflatoxin production. Fungal infections are also more common in corn under stress, such as from drought, heat, insects, nutrient deficiency, etc. As a result, *Aspergillus* ear rot in corn is typically more common in southern states, but conditions in Wisconsin during 2012 were favorable for increased risk of *Aspergillus* ear rot.

Fungal growth and visible mold on corn can lead to grain contamination with mycotoxins – toxins produced by these fungi. *Aspergillus* ear rot on corn can produce aflatoxins – highly toxic compounds officially listed as potential carcinogens. The U.S. Food and Drug Administration (FDA) has established aflatoxin maximum acceptable limits of 20 parts per billion (ppb) for corn used as feed for dairy animals and 0.5 ppb in milk. These extremely low levels reflect the highly toxic nature of these compounds and the importance of examining corn at harvest and testing for aflatoxin.

Other mycotoxins can also cause problems. More common in the upper Midwest are *Fusarium* species that can infect corn kernels and produce fumonisins and vomitoxin. 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.

## **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 aflatoxin in grain, that grain **SHOULD NOT BE BLENDED** with uncontaminated corn. The FDA has established a “do not blend” policy for aflatoxin due to its extreme toxicity.

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 mold. Avoid kernel damage during harvest, as cracks in kernels can promote fungal growth. Also, dry corn properly (12% or less), as grain moisture less than 12% typically inhibits fungal growth. Finally, keep storage facilities clean.

## **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 aflatoxin or other mold issues, contact your crop insurance agent before harvesting, storing or selling the corn. Farmers will likely lose indemnities for grain quality losses if grain is harvested. If aflatoxin tests indicate contamination above safety limits (e.g., 20 ppb for aflatoxin), insured growers following proper procedures will be compensated for the reduction in value of the grain. The key is to communicate with your crop insurance agent before harvesting contaminated grain. Your crop insurance agent will tell you how to proceed: how to collect grain samples and how many samples to collect. Also, growers may be asked to leave un-harvested rows for crop loss adjustors to use to determine indemnities. Expect delays in crop loss adjustment, as the system is overwhelmed with insurance claims this year, but your crop insurance agent will be able to tell you how to proceed to confirm suspected aflatoxin contamination in order to receive indemnities if they are due.

## **For More Information**

Contact your local UW Extension agent or the authors with questions or for more detailed information and your crop insurance agent with specific questions regarding your crop insurance coverage. Also, the USDA Risk Management Agency also has two fact sheets:

- Loss Adjustment Procedures for Aflatoxin: <http://www.rma.usda.gov/pubs/rme/2012aflatoxinfo.pdf>
- Aflatoxin Testing: IA, MN, WI: [http://www.rma.usda.gov/fields/mn\\_rso/2012/2012aflatoxin.pdf](http://www.rma.usda.gov/fields/mn_rso/2012/2012aflatoxin.pdf)