

## Harvesting, Handling, and Drying Corn with Ear Rots in 2009

Richard Stroshine, Professor  
Agricultural and Biological Engineering Department  
Purdue University  
strosh@ecn.purdue.edu

During the 2009 harvest, growers have reported a significant amount of *Diplodia* and *Gibberella* ear rot in Midwest corn fields. When ear rot is a problem, the corn should be harvested as soon as possible to stop the growth of the ear rot fungi. However, if the problem is severe, check with crop insurance providers regarding adjustments for the damage to the crop. Generally these assessments must be made on standing corn before it is harvested.

Keep in mind that enough drying capacity should be available to quickly dry the corn below 20%. This will ensure *Diplodia* or *Gibberella* ear rots do not continue to grow on the corn when it is in the bin. When harvesting use the maximum capacity of the combine to remove fine material and shrunken, mold damaged kernels. The fine material should be removed because it promotes mold growth and interferes with aeration. Experiment with increasing the fan speed to determine whether this will separate some of the light, severely damaged kernels from the good kernels without removing too many good kernels. Increasing cylinder rpm's may break up more of the mold damaged kernels, which should be weaker. However, the higher rpm's will also inflict more damage on the good kernels making them more susceptible to mold growth during drying and storage. Incorporate a screen cleaner into your handling system to remove fine materials not removed by the combine before the corn is placed in the bin. The cleaner may also remove some of the smaller shriveled kernels that have been infected by ear rots.

The best strategy is to dry the corn as quickly as possible below 15% moisture. Once corn is below 20% moisture, there should be no significant growth of *Diplodia* and *Gibberella* in the stored corn. Storage molds including *Penicillium*, *Aspergillus*, and *Eurotium* should not grow when moisture is below 15%, providing the grain is kept below 50°F. Drying to a slightly lower moisture of 14% will be more expensive but will also provide additional protection from mold growth. Do not mix corn with high levels of mold damage with good corn. The dried corn should be cooled below 50°F immediately after drying and eventually cooled to 32 to 35°F if it will be held into the winter. The corn should be marketed or fed to animals (see below) as soon as possible and should not be held until spring. Ethanol plants may reject corn with high levels of mold damage because it will reduce their yields and, if there are toxins present, those toxins can be concentrated by a factor of 3 in the co-products such as DDGS and WDG. These co-products are usually marketed as an animal feed ingredient. While the corn is in storage, keep it well aerated. Inspect the bins regularly so that problems can be detected early.

Before corn is fed to animals it should be tested for mycotoxins. *Diplodia* does not produce toxins. However, *Gibberella* and other ear rots do produce toxins. For information on mycotoxins and testing for mycotoxins check on the website [www.grainquality.org](http://www.grainquality.org) and choose "Extension Publications," then choose "Diseases and Mycotoxins" and, finally, look for publication BP-47. Some USDA grain inspectors, larger grain elevators, or feed processors have relatively simple and easy to use test kits that can be used for screening samples for mycotoxins. Care must be taken to obtain a representative sample for testing. Animal species differ in susceptibility to

various toxins and younger animals are more sensitive. Consult animal science publications for information on feeding corn containing mycotoxins. Additional information on ear rots can be found on the “Diseases and Mycotoxins” tab on [www.grainquality.org](http://www.grainquality.org).