



Extension FactSheet

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Diplodia Ear Rot of Corn

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Diplodia ear rot is one of the ear diseases found in Midwest corn fields of the U.S. Corn Belt. Diplodia ear rot is not as common as Fusarium or Gibberella ear rots but it can be just as destructive. During years with abundant rainfall during the growing season, disease severity can be high in certain fields planted to susceptible hybrids. The incidence of ear rot in affected fields generally ranges from less than 1% to over 35% of the ears damaged. The disease is most severe in fields planted to continuous corn, especially when the previous corn crop residues are left on the soil surface. The fungus causing Diplodia ear rot can also cause a stalk rot, however the stalk rot phase has not been as common as Gibberella, Fusarium, or Anthracnose stalk rot in Ohio.



Diplodia (*Stenocarpella*) ear rot—note thick layer of white mold on ear.

Diplodia ear rot causes damage to corn by causing lightweight kernels that reduce yield and by reducing the nutritional value of affected grain. The fungus causing this disease does not appear to produce mycotoxins in the grain under field conditions usually occurring in the United States. Thus, the toxic problems seen with other ear molds, like Fusarium and Gibberella ear rot, are not a problem with Diplodia ear rot. However, high levels of affected grain in feed may make the feed unpalatable or cause reduced weight gain in hogs. Under most conditions damage caused by Diplodia ear rot is limited to the field, but it can be a problem in storage if grain moisture is 20% or above.

Symptoms

Diplodia ear rot can be recognized as a thick white mold that usually starts at the base of the ear. Later the white mold changes to a grayish-brown growth over the husks and kernels. The entire ear may be shrunk, and the infected kernels appear glued to the husks. Infected ears are very lightweight and may be totally rotted. In some cases the mold may be detected at the tip end of the ear. A specific characteristic of Diplodia ear rot is the appearance of raised black fruiting bodies of the fungus on moldy husks or kernels. However, these black bodies usually form later in the season. If infection occurs early then the entire ear may be covered with mold. If infection occurs several weeks after silking, then only a portion of the ear may be affected. Later infections may



Diplodia (*Stenocarpella*) stalk rot—note black pycnidia on stalk surface.

result in only a fine web of fungal growth appearing on kernels.

Disease Cycle

Diplodia ear rot is caused by the fungus *Stenocarpella maydis*, which overwinters on corn residue. Corn is the only known host for this fungus. Spores produced in raised black fungal bodies on corn residue are spread by splashing rain. Although the exact timing and point of infection is not entirely understood, it appears the fungus is capable of infect-

ing through the ear shank or the base of the husks of the ear and through the silks. Spores splashed into the whorl prior to tasseling or those trapped in the leaf sheath covering the ear shank may initiate infection. Ear silks are susceptible to infection up to 3 weeks after midsilk. Wet weather in combination with mild temperatures from late whorl through early ear development favor disease development. Corn borer injury can cause an entry wound for the pathogen. In some regions of the world Diplodia ear rot is associated with harmful mycotoxins. The lack of mycotoxin problems in the United States from Diplodia ear rot may be due to modern harvest practices of early combining and rapid drying of grain prior to storage.

Control

Planting resistant hybrids is the most effective way to control Diplodia ear rot. Crop rotation and fall tillage can reduce the occurrence of the disease by reducing fungal levels in the field. Dry harvested grain to 15% and below to prevent further mold growth in storage. Dilute moldy grain with clean grain prior to using it as feed to prevent problems with livestock. Evaluate the nutritional value of the feed to make sure animals are receiving adequate nutrition for rapid gains.

Additional information can be obtained from your local Extension office or The Ohio State University web site Ohioline at: <http://ohioline.ag.ohio-state.edu>

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