

Diplodia Ear Rot Of Corn And Mycotoxin Potential



DR. PAUL VINCELLI

LEXINGTON, KY.

Diplodia ear rot is the most common ear rot disease of Kentucky corn. It is caused by two fungal species in the fungal genus *Stenocarpella*: *Stenocarpella maydis* (the prevalent species in Kentucky) and *Stenocarpella macrospora* (also found in Kentucky, but not a common cause of ear rot here). Note that scientists used to consider these fungi to be species of the fungal genus *Diplodia*. Even though the name of the fungi themselves has changed, the name of the corn disease remains the same: Diplodia ear rot.

Mycotoxins from *S. maydis* have caused neurological disorders in cattle in South Africa and Argentina. Reported symptoms of diplodiosis in cattle include ataxia (loss of coordination), paresis (partial paralysis) and paralysis.

No cases of poisoning from *Stenocarpella* mycotoxins have been reported in the United States to date, and feeding livestock with *Stenocarpella*-affected corn from the U.S. has not been considered to pose a mycotoxin risk. However, new recent indicates that a potential for risk might exist in U.S. corn.

Published research indicates that *S. maydis* isolates from the U.S. are capable of producing a variety of mycotoxins. A toxin called *diplodiatoxin* has been detected in corn showing symptoms of Diplodia ear rot grown in fields in the Midwest, close enough geographically to be of concern to Kentucky producers. There are also preliminary indications of mycotoxins called *chaetoglobosin* being found in Midwestern corn. Laboratory experiments clearly indicate that other mycotoxins may also be produced by *S. maydis*, although these have not yet been reported in field-grown U.S. corn.

I was surprised to learn that toxins produced by *S. maydis* may also be produced in infected

stalks, potentially posing a risk to livestock that graze on the crop residue. An outbreak of mortality of heifers was documented in Argentina several years ago when the animals fed on stalk residues colonized by *S. maydis*.

Not all isolates of *S. maydis* produce toxins. However, evidence to date suggests that the ability to produce mycotoxins is not unusual in U.S. isolates. Thus, even though no cases of poisoning from these mycotoxins have yet been reported in the U.S., caution is advised when feeding livestock with corn badly affected by Diplodia ear rot.

I am aware of no domestic laboratories equipped to offer testing services for toxins associated with Diplodia ear rot. To my knowledge, only selected research laboratories have developed the capacity to test for these toxins, and these laboratories are generally not equipped to provide public testing services. Another even more important challenge is the fact that much is still being learned about the various mycotoxins produced by the two *Stenocarpella* species, including their occurrence, and their toxicity. Given our present, limited state of knowledge, test results would be extremely difficult to interpret.

While infrequent this year, severe outbreaks of Diplodia ear rot occur periodically in Kentucky. As a rule, if feeding livestock with *Stenocarpella*-affected grain, it would be wise to do so cautiously, with attention to how animals respond. The nutritive value of *Stenocarpella*-affected corn may be reduced, and feed refusal has sometimes been reported.

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DR. PAUL VINCELLI: Extension Professor and Provost's Distinguished Service Professor, University of Kentucky