

Burrus BUZZ

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Prevent diplodia ear rot on your farm

by Josh Gunther, Burrus Seed Product Lead

One common concern on growers' minds this year revolves around diplodia ear rot. Many farmers in central Illinois are walking their fields and starting to be concerned about this potentially devastating disease. Diplodia ear rot or *Stenocarpella maydis* can be easily identified in the field. Usually it is first noticed by the early browning (bleaching) of the husks. When the disease progresses, a white mold or fungus can be found growing on the cob and kernels, giving it a mummified look, and possibly black spots called pycnidia on the ear. This disease can lower yields by decreasing kernel size and test weight, as well as increasing the possibility of discounts on the grain at the elevators. As I am sure we have all heard before, the three components needed for any disease to thrive is a host, a pathogen, and the correct environment.

The host in this instance is our corn hybrid. As with everything else, when comparing corn hybrids, not all are created equal. We rate each one of our hybrids for their susceptibility to diplodia ear rot. It is important to know that every corn hybrid can get diplodia if the conditions are correct. That being said, there are two factors that make a hybrid more susceptible than others. One is the hybrid's genetics. Some hybrids are more resilient to certain diseases than others, and this has to do with the genetic platform of the hybrid. The second factor to consider is what we call the "plant architecture." Plants that have a more upright ear with a tightly bound husk tend to be more prone to being infected with diplodia.

The second part of the disease triangle is the pathogen. The spore of *Stenocarpella maydis* survives on corn residue for years. These spores can infect the developing ear starting at silking, with the most susceptibility for the first 21 days after silking. In order for these fungal spores to infect the growing ear, they have to find their way onto the silks. Because the spores have to be splashed from corn residue, there are typically a higher percentage of infected ears on the outside rows of a field. To be able to judge the true infection level, counts of ears infected with this ear rot should be done in the center of the field. Because the disease overwinters in the corn residue, one of the best ways to control it is with crop rotation and tillage.

The third part of the disease triangle is the correct environment. Diplodia is worst if there is dry weather prior to silking and then extremely wet weather during that 21 day period after silking. These conditions sound very familiar to what west central Illinois has experienced this season.

There is some good news and bad news when it comes to diplodia ear rot. The bad news is there is no rescue treatment for diplodia. No research shows fungicides lowering disease severity at all. The small silver lining is diplodia infected kernels do not contain any toxins thus it is not harmful when used for feed. Prevention is the primary course of action to reduce diplodia, which includes:

- Rotating to soybeans next year on the most severely infected fields.
- Selecting hybrids that have a higher tolerance to diplodia ear rot for corn on corn ground.
- Using tillage where applicable.
- Reducing stress in your plants with adequate fertilizers and population.
- Most importantly, spreading your risk by using different planting dates and maturity to spread silking into different environmental conditions.

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Spreading out the silking window is the most effective way to limit the amount of diplodia ear rot on your farm. By spreading the silking window there is less chance that hybrids will be effected. Our planting date study in Arenzville is a good example of the interaction between the timing of silking and a weather event that infects ears with diplodia. In this study, the same hybrid was planted side-by-side on different dates, such that the only variable was silking date. The results were a huge difference in the amount of infected ears:

2016 Planting Date	March 18	April 5	April 19	May 7	May 31
Percent Infected	46%	31%	71%	0%	6%

As you can see from these numbers, there was a definite peak in which inoculation of diplodia occurred in this field this year. This, of course, changes greatly from year to year. There is no way to predict at planting time which planting will have the most diplodia at the end of the season. If you farm in one area and had planted all of your acres to the same hybrid on the same day and you ended up getting 71% of your ears infected with diplodia, it would be a very bad year. The main thing we can do is minimize our losses by spreading out our silking window.

*Comments or questions for our agronomic research team?
Submit to us: burrus.seed@burrusseed.com*