

# Specialist Studies Corn Trichoderma Ear Rot



**DR. PAUL VINCELLI**

**LEXINGTON, KY.**

**T**richoderma ear rot is one of the less common ear rots of corn in Kentucky. However, it is possible to occasionally see severe outbreaks of this disease.

This ear rot produces abundant growth of green fungal material between kernels, often involving much of the ear (Figure 1). Sometimes, in severely affected ears, kernels germinate within the husk (Figure 2). Not all greenish molds on rotted corn kernels are caused by Trichoderma fungi. However, Trichoderma can be commonly recognized by dark green to bluish-green fungal growth between kernels, often involving large areas of the ear.

I visited a very severe outbreak of this disease last season, and we did some follow-up research in this case. Here are some of the things we learned:

1. We confirmed that the fungus is a Tricho-

derma, using DNA sequencing. We could not positively identify the species even using DNA sequencing, in part because the taxonomy of Trichoderma fungi is still a "work in progress".

2. Diseased ears were associated with injury to the developing ear, in this case due to flocks of birds (Figures 3 & 4). Others have made similar observations in the past. We also checked for internal infection by Trichoderma of stalks and cobs, and it was uncommon. These observations collectively suggest to me that the injury to the developing ear was the factor that allowed severe Trichoderma ear rot to develop (Figures 3-4). Such injuries would allow both windblown spores and rainfall to enter the ear, setting the stage for ear rot development.

3. Certain species of Trichoderma may produce mycotoxins, and so we checked badly diseased grain for toxins, including T-2 toxin. I was pleased to learn that no mycotoxin that we tested for was above detectable levels.  $\Delta$

*DR. PAUL VINCELLI: Extension Plant Pathologist, University of Kentucky*



**Figure 1.**  
Trichoderma ear rot of corn.



**Figure 2.** Corn ear with Trichoderma ear rot, with some kernels germinate in the husk.  
Image by Bill Beachum, Pioneer Hi-Bred.



**(Photo Above) Figure 4.** Same ear as in figure 2, with husk leaves partially removed.  
**(Photo on Left) Figure 3.** Corn ear showing bird damage.