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Corn seedling disease and crown rot

Gary P. Munkvold

Iowa State University, munkvold@iastate.edu

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Abstract

Poor growing conditions have resulted in some predictable problems with corn emergence, many of which include infection by fungi. Pythium and Fusarium have been prominent this year in fields with emergence problems.

Keywords

Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

INTEGRATED CROP MANAGEMENT

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[1] **Dissected corn plant showing symptoms of Fusarium crown rot.**

As plants move beyond the seedling stage but continue to contend with wet conditions, some of the seedling infections linger on to cause more problems. In particular, infection of seedlings by *Fusarium* species can persist and move into the crown and stalk tissues. Normally, the crown tissue of healthy corn plants is slightly darker than surrounding tissue, but *Fusarium* infection leads to an even darker color. Several species of *Fusarium* can commonly be isolated from crowns of corn plants at any growth stage, and they can be present without causing visible symptoms. In other cases, the fungus can cause substantial rotting, where the crown tissue becomes brown and soft. These plants can exhibit stunting, leaf discoloration, wilting, and even death. Extensive decay of this part of the plant cuts off the connection between leaves and roots, directly destroys the growing point, or both. I have seen this in plants from the seedling stage on up to knee-high in height.

Stressful growing conditions cause the plants to become more susceptible to this type of infection. The cold temperatures that have accompanied the rain provided additional stress this year, and crown rot also has resulted from hail damage. Assuming the weather improves, some of the infected plants will recover, but if the decay is severe, the plants may die later. The decayed crown cannot support the moisture needs of the plant after the weather becomes warm and sunny. If we experience this type of weather, watch for plants that wilt and die suddenly. Crown infections can persist well into the season, eventually resulting in stalk rot. If you have observed crown rot problems in a field, watch for stalk rot later.

Because *Fusarium* species are common in crop residue and soil, and resistance to this type of infection is not available, there are few practical control measures. Fungicidal seed treatment will not persist long enough to help in this situation. If predisposing stresses can be identified, alleviating them will reduce losses to *Fusarium*. If plants are stunted but the crowns are not totally destroyed, cultivation may promote development of the nodal root system and help the plants recover.

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