

Plant Pathology Fact Sheet

Seed and Seedling Diseases of Corn

by Paul Vincelli

Corn seeds and seedlings are susceptible to infection by a number of soilborne fungi. When planted into cool, wet soils, seeds may decay before or after germination. Affected plants that survive past the seedling stage may go on to produce an ear if nodal roots develop normally, although stunting and reduced ear size can occur as a result of seedling diseases. Severely affected plants may die during stressful weather as the result of an inadequate root system.

SYMPTOMS

After emergence, seedlings may show the following aboveground symptoms: stunting, yellowing and/or reddening of older leaves, marginal burning of leaves, and “tall plant/short plant” syndrome. Recognize, however, that these symptoms may also be due to non-infectious problems, like poor phosphorous uptake in cool soils. If infectious diseases are involved, roots—especially tips—exhibit a variety of symptoms of rot: collapsed or firm, grayish-white to purple to brown decay.

CAUSES

Fungi that are commonly associated with seed and seedling diseases of corn include common soilborne fungal pathogens: *Fusarium*, *Pythium*, and *Rhizoctonia*. *Diplodia*, an ear rot fungus, can also cause seedling disease, but is not commonly observed.



PYTHIUM SEEDLING BLIGHT

DISEASE MANAGEMENT

Seed and seedling diseases of corn can be minimized by planting seed treated with fungicides (captan, thiram, metalaxyl, or mefanoxam) into soils warm enough to promote prompt germination and emergence. A good guideline is to postpone planting until the soil temperature is at least 50° to 55° F at a two-inch depth when measured around sunrise.

Often, seedling diseases in corn are an indication of some other problem which predisposed plants to infection. Possible predisposing stresses include: fertilizer burn; misplacement of soil pesticides; herbicide

injury; soil compaction; a seed furrow with slick, compacted side walls; and so on. Some detective work out in the field and with field records is often necessary to identify the factor ultimately responsible.

ADDITIONAL RESOURCES

Disease management advice can be found in the following University of Kentucky publications available at County Extension offices, as well as on the Internet.

- A Comprehensive Guide to Corn Management in Kentucky, ID-139
<http://www.ca.uky.edu/agc/pubs/id/id139/id139.htm>

- Kentucky Integrated Crop Management Manual for Field Crops: Corn, IPM-2 (1997)
<http://www.uky.edu/Ag/IPM/manuals/ipm2corn.pdf>

- Kentucky Plant Disease Management Guide for Corn and Sorghum, PPA-10a (1995)
<http://www.ca.uky.edu/agc/pubs/ppa/ppa10a/ppa10a.pdf>

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