

Learn to Recognize Corn Seedling Disease

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The first few weeks after planting are a crucial time to evaluate the condition of corn stands and determine the success of stand establishment. Corn seedling diseases are one of the problems that can reduce your plant population, sometimes to the point that replanting is necessary.

When a stand establishment problem occurs, it is important to be able to distinguish whether the problem is due to diseases, insects, herbicide injury, soil compaction, or some other cause. This will determine what action you can take to prevent recurrence of the problem.

Seedling diseases in corn are caused by fungi, some of which are soilborne, some seedborne. The most common are phythium, fusarium, and penicillium,

but a number of other fungi can be involved. Some will rot seeds before they germinate; in other cases, the seeds germinate but fail to emerge, or they emerge and quickly die. If the seed germinates and the seedling is infected, there will be some brown discoloration on the mesocotyl, primary roots, and/or nodal roots. The tissue may appear dark and slimy or dry and shriveled. It is sometimes possible to tell which fungus is the culprit, based on symptoms or presence of spores. However, it is not crucial to determine the specific fungus involved in corn because management options are essentially the same for any seedling disease.

It is important to determine whether your problem originates from disease as opposed to herbicide injury, insect damage, or other cause. Always look for evidence of insect feeding or, if a

herbicide is suspected, look for abnormal plant development.

Seedling diseases tend to occur when soil conditions are cool and wet, and emergence is delayed. Seedlings that take a long time to emerge are easy targets for fungal infection. When poor stands occur in patches, especially in an area of the field that is low or poorly drained, fungi are likely to be involved. Because fungi are not uniformly distributed in soil, it is not unusual to see a healthy seedling directly adjacent to a dead seedling. These are not the patterns expected for herbicide injury.

To prevent corn seedling diseases, use high-quality, fungicide-treated seed. Plant when soil temperature is above 50 degrees F and soil moisture is adequate but not excessive. Be sure that planting depth is not too deep, and that you are getting good

seed-to-soil contact. Crop rotation can be helpful to reduce populations of the pathogens, although many fungi that cause these diseases can infect both corn and soybeans. Seedling diseases can be worse when corn follows corn because of higher soil moisture and lower temperature. This effect can be more noticeable under heavy residue conditions.

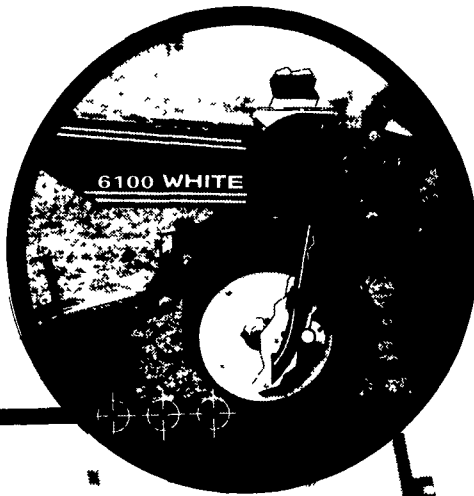
Planter-box treatments are not necessary to prevent

fungal infection of corn seeds and seedlings if the seed has already been commercially treated. Additional fungicide is not likely to provide much benefit. If insects are believed to be a problem, a planter-box treatment may be beneficial.

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