

INTEGRATED CROP MANAGEMENT

Planting date affects corn diseases

Although recently we've had a return of the usual cool, wet weather, the overall warm spring means that corn planting is underway early this year. It's a good time to consider how this might affect diseases. For the most part, there is good news.

Early planting can increase the risk of seedling disease and some other soilborne pathogens, but this year, the cold, wet soil usually associated with early planting just isn't there. For many other diseases, the risk of disease (or yield loss) is lower for early-planted corn. Early planting reduces the risk of damage by some diseases because plants are further along in their development at the onset of disease. Plants infected later in their development suffer less yield impact from diseases.

Leaf blights tend to start during the mid-season and gain momentum as time goes on, so that they are developing most rapidly late in the season. This pattern can vary a lot due to weather, but in general, early plantings suffer less damage than late plantings because the early plantings will complete grain fill before there is extensive leaf damage. Diseases like gray leaf spot and eyespot cause greater yield reduction when infection occurs on younger plants; earlier plantings are older when infection starts, so damage is less. For Stewart's disease, the effect of planting date can be variable, depending on the timing of corn flea beetle emergence.



The occurrence of diseases like *Gibberella* ear rot can be affected significantly by planting date.

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With ear rots, early plantings are less likely to suffer extensive damage, although wet weather during silking can alter this pattern. Ear rots become more severe as the corn stays in the field during late summer and fall. Later maturing fields could experience more cool, wet fall conditions, which are more favorable to *Diplodia* and *Gibberella* ear rots. Early plantings also have the advantage of a longer window for dry-down, decreasing the likelihood of storage molds that go with higher moisture in storage or frost-damaged grain.

It is difficult to generalize about the effects of planting date on stalk rots. Stalk rot development is often related to the growth stage of the plant, so it may be delayed in late-

planted corn. However, if dry-down is delayed because of late planting, the plants could suffer increased stalk rot damage as they stand in the field late into the fall. Usually the length of time between physiological maturity and harvest is important in determining the extent of stalk rot damage. Early maturing fields can suffer considerable lodging damage if harvest is not timely.

In general, drier springs favor better root development, decreasing the risk of stalk rot. But for stalk rots and other late-season diseases, keep in mind that weather conditions later in the season often have more influence than early-season conditions.

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<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2002/4-29-2002/plantdate.html>

Links:

[1] http://www.ent.iastate.edu/imagegal/plantpath/corn/gibberella/gibberella_ear.html

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