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Phytophthora damping-off in a rainy spring

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Phytophthora damping-off in a rainy spring

Abstract

We have had plenty of rainfall across Iowa since late April. Frequent rainfall has slowed soybean planting for the past 2 weeks. Based on recent reports from Iowa State University field crop specialists, only about 10 percent of soybean are planted, which is much less than what we had in the ground at this time during the last two growing seasons.

Keywords

Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

INTEGRATED CROP MANAGEMENT

Phytophthora damping-off in a rainy spring

We have had plenty of rainfall across Iowa since late April. Frequent rainfall has slowed soybean planting for the past 2 weeks. Based on recent reports from Iowa State University field crop specialists, only about 10 percent of soybean are planted, which is much less than what we had in the ground at this time during the last two growing seasons.



Preemergence damping-off of soybean.

[Enlarge](#) [1]

Soybean fields that are not planted early (before May or in the first week of May) generally have lower risk of having been pod mottle and sudden death syndrome, two major soybean diseases. These diseases were prevalent in early-planted soybean in Iowa last year. However, weekly rains in spring are favorable to the occurrence of *Phytophthora* damping-off. Although it is difficult to predict the occurrence of plant diseases, especially soilborne diseases, we still can use weather patterns to assess favorability of future conditions to certain diseases, which also is useful information for disease scouting.

Be on the lookout for *Phytophthora*

The potential for *Phytophthora* damping-off this year is higher than last year for three reasons. First, the *Phytophthora* fungus favors warm soil temperatures (70-80°F), and soybean planted late would experience higher soil temperatures during seed germination and seedling stages than early-planted soybean. Second, periodic rains in weekly intervals in a planting season are ideal for infection by *Phytophthora*. Third, the prevalence of *Phytophthora* races that can defeat the 1k-gene has increased drastically in recent years. Results of our study funded by check-off dollars indicate the 50 percent of *Phytophthora* isolates found last year can defeat 1k-gene. There is no resistance to these new races in commercial varieties. If you found seed rot or damping-off, pay attention to *Phytophthora*.

Monitor fields

It is very difficult to predict the prevalence of *Phytophthora* for a coming season. *Phytophthora* damping-off has two forms: postemergence and preemergence damping-off (also called seed rot). Pay attention to fields that already have been planted for signs of pre- and postemergence damping-off. For the fields planted after mid-May, seed rot is more likely

to occur than preemergence damping-off. Fields that had *Phytophthora* problems in the past would have higher risk. If you spot stand establishment problems or no emergence, dig the seed up to check seed rot.

Deal with damping-off

If *Phytophthora* damping-off or seed rot is found, here are recommendations. 1) Switch to resistant varieties if a susceptible variety has been used. 2) Use seed treatments if replanting is needed and if the previous planting did not have seed treatment. Make sure to use fungicides that are effective against *Phytophthora* (see the [article](#) [2] on seed treatment in the March 17, 2003, *Integrated Crop Management* newsletter). 3) If damping-off occurs after seed treatment has been used for varieties with the 1k-gene, consider using tolerant varieties because infections are likely done by new races.

Keep in mind that if the weekly rain pattern changes to less or no rain during the rest of planting season, *Phytophthora* risk will be reduced.

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<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2003/5-19-2003/dampoff.html>

Links:

[1] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/dampoff/seed-rot-dampoff.html>

[2] <http://www.ipm.iastate.edu/ipm/icm/2003/3-17-2003/soytreat.html>

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