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Early summer soybean diseases

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Abstract

After the dry, warm planting season, most areas in Iowa have received more rain than predicted. These conditions have lead to various disease problems. The diseased plant samples sent to the Iowa State University Plant Disease Clinic and the questions received can be divided into root diseases and foliar diseases. This article summarizes these disease problems and how they may influence the coming season.

Keywords

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Disciplines

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INTEGRATED CROP MANAGEMENT

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After the dry, warm planting season, most areas in Iowa have received more rain than predicted. These conditions have led to various disease problems. The diseased plant samples sent to the Iowa State University Plant Disease Clinic and the questions received can be divided into root diseases and foliar diseases. This article summarizes these disease problems and how they may influence the coming season.

Root rot diseases

Fusarium, *Rhizoctonia*, and *Phytophthora* are the three major fungi causing root rot problems this year. The clinic has received a lot of soybean samples from eastern and southern Iowa. Many samples are from varieties that have the Rps-1k gene. In recent years, the number of *Phytophthora* samples from varieties with the Rps-1k gene has increased dramatically and such a trend suggests possible changes in *Phytophthora* races in Iowa. For the rest of the season, incidence of *Phytophthora* root rot is likely to be higher than normal in some regions because periodic rain is ideal for its occurrence.



Reddish-brown lesion of Rhizoctonia root rot.

[Enlarge](#) [1]



Bacterial blight on soybean.

[Enlarge](#) [2]

Iron chlorosis-associated fungal root rots are prevalent this year. Infected plants appear yellow and stunted. The plants may be scattered or found in large patches; they often occur in fields or areas with poor drainage. They may have poor root systems and poor nodulation with reddish brown or dark brown lesions on taproots. Soybean becomes more susceptible to these fungi when weakened by stresses.

Agronomic practices that enhance plant vigor are effective in managing root rot diseases and there is no remedial action that can be taken. Plants with light root rot often can grow out the problems. Use cultivation to mound soil around the plant base and promote root growth.

When severe root rot is associated with other stresses, elimination of the stress factors is important to root health. If iron chlorosis is the primary reason for root rot, consider the use of iron chlorosis-tolerant varieties.

Foliar diseases

Bacterial blight and brown spot have been observed in some soybean fields. Although symptoms of the two diseases are similar, bacterial blight is caused by a bacterium and brown spot is caused by a fungus. Symptoms of brown spot are many irregular, dark brown spots on both upper and lower leaf surfaces. Adjacent lesions frequently merge to form irregularly shaped blotches. In early disease stages, lesions of bacterial blight have a yellow halo that is lacking in brown spot. Brown spot lesions are chocolate brown to blackish brown. In addition, brown spot infects aged lower leaves and bacterial blight infects new leaves.

Brown spot and bacterial blight are common in some regions because the rainfall in June promoted their development. However, the two diseases normally do not affect yield unless they continue their development to late season with excessive rainfalls throughout the season, such as the unusual growing season in 1993. Therefore, the risk of yield losses is generally not a concern. There have been no well-documented yield losses caused by these two diseases.

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- [1] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/rootrot/rhizoctonia/3185.3rhizoctoniarootrot.html>
[2] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/1303.1bacterialblight.html>

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