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Soybean brown spot and bacterial blight

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Abstract

The excessive rains and cool temperatures during early summer created conditions that favor certain diseases. Besides iron chlorosis, growers and agronomists from co-ops report occurrence of Phytophthora, Fusarium wilt, brown stem rot, and soybean brown spot, which is prevalent in many soybean fields. This article focuses on brown spot.

Keywords

Plant Pathology

Disciplines

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INTEGRATED CROP MANAGEMENT

Soybean brown spot and bacterial blight

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Brown spot is an early season fungal disease caused by *Septoria glycines*. Plants as young as the V2 growth stage are showing symptoms. The fungus spreads from the soil to soybean plants by splashing rain. Frequent rainfall this season is the primary reason for the occurrence of this disease. 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.



Comparison of brown spot (left) and bacterial blight (right) in soybean.

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If you find brown spot in your fields, it is likely that you also would see bacterial blight, a disease that is common in cool, rainy seasons. Bacterial blight is caused by a bacterium called *Pseudomonas syringae*. Lesions of the disease are small, angular, water-soaked, yellow-to-brown spots on leaves. The angular lesions enlarge in rainy weather and merge to produce large, irregular dead areas. Sometimes, brown spot can be mistaken as bacterial blight. 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. Furthermore, bacterial blight is normally observed on top leaves or new growth, whereas brown spot normally occurs on lower and aging leaves.

Generally, brown spot and bacterial blight occur in Iowa without causing significant yield losses. These diseases are more frequently observed in areas that have received considerable rainfall and stormy weather because the corresponding pathogens are disseminated by rain and wind. Early in the season, brown spot should not cause severe defoliation because the disease is more pronounced in old leaves and soybean can outgrow the disease. As the season progresses, the disease could cause premature defoliation if weather conditions are cool and wet, resulting in rapid increase of the disease from the lower leaves to the upper leaves. In 1993, epidemics of brown spot occurred in Iowa late in the growing season. For bacterial blight, incidence of the disease is reduced as the temperature increases. Bacterial blight can infect pods and seed quality may be affected when the

disease is severe.

If you find high incidence of brown spot or bacterial blight now, there are no remedial measures for protection from these diseases. Later in the season, scouting is recommended. If bacterial blight is severe, you should not use the seeds for next year because the disease can be seedborne. To reduce the risk of these diseases, avoid use of susceptible cultivars for the next soybean crop. Rotation with corn also reduces disease risk for both bacterial blight and brown spot.

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[1] <http://www.ent.iastate.edu/imagegal/plantpath/soybean/1303.82bspotnbblight.html>

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