

## ***Cercospora Leaf Blight & Purple Seed Stain of Soybean***

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Cercospora leaf blight and Purple seed stain are caused by the same fungal pathogen. Disease development typically occurs late in the growing season from beginning of seed development through pod fill. Though both diseases have been reported in all soybean growing regions of the U.S., yield losses are higher in southern states.

The first visible symptom of Cercospora leaf blight is a light purple discoloration on the upper leaf surface. This discoloration can deepen and expand to cover part or the entire upper leaf surface, giving a leather appearance, sometimes mistaken for sunburn. Numerous infections cause rapid necrosis of leaf tissue resulting in defoliation, starting in the upper canopy. Lesions on petioles or stems are reddish purple and several millimeters in length (Fig. 1). Infected petioles remain attached to the plant that has been defoliated by Cercospora leaf blight (Fig. 2).



Figure 1. Purple discoloration of a soybean leaf caused by Cercospora leaf blight. Picture by C. Coker.



Figure 2. *Cercospora* leaf blight on stems and petioles with accompanying defoliation. Picture by C. Coker.

Purple seed stain is characterized by irregular light to dark purple blotches on the seed that may cover much or even all of the seed coat. Infection can lower seed quality, germination, and seedling vigor. Prolonged delay of harvest may contribute to a higher frequency of seed infection and discoloration.

The fungus *Cercospora kikuchii* is the causal agent of both diseases that overwinters in crop debris and infected seed. The pathogen produces a light-activated plant toxin called cercosporin, which is suspected of contributing to the reddish-purple discoloration of diseased tissue. Spores produced on infected debris are dispersed by wind or rain onto nearby soybean plants. Infection and disease development are favored by extended periods of high humidity and warm weather (82 to 86°F).

Disease management strategies include planting high-quality disease-free seed, using tillage practices that hasten decomposition of crop residue, growing the least susceptible cultivars that are adapted for the area, crop rotation with non-host crops such as corn, cotton, rice or sorghum, and timely harvest. Fungicides applied when weather conditions favor disease may suppress disease severity.