

Bacterial Blight of Soybean

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Bacterial blight is the most common bacterial disease of soybean and occurs in all soybean producing regions of the world. Although this disease is of limited importance in most Arkansas production areas it is one of the first leaf spot diseases to appear on young plants. Bacterial blight has been reported to cause significant yield reductions on susceptible cultivars under heavy disease pressure.

Bacterial blight is primarily a leaf disease, but symptoms can occur on stems, petioles and pods. Leaf symptoms begin as small, angular, translucent, water-soaked yellow to light-brown spots. As the spots age, the center darkens to a reddish-brown becomes sunken and surrounded by a water-soaked margin bordered by a yellowish-green halo (Fig. 1). The halo is more noticeable on the upper leaf surface. When environmental conditions favor disease development spots may enlarge and merge to form large, irregular, necrotic areas. These large dead areas of the leaf often fall out or tear away after strong winds and beating rains, giving leaves a ragged appearance. When disease is severe, premature defoliation may occur.



Figure 1. Small necrotic lesion with yellow halo caused by bacterial blight.

Leaf symptoms of bacterial blight may resemble those of the fungal disease brown spot. However, bacterial blight moves upward within the canopy rapidly whereas upward movement is slow for brown spot. A simple test for bacterial blight is to hold infected leaves to the light, bacterial blight spots will be translucent.

Bacterial blight is caused by the bacterium, *Pseudomonas savastanoi* pv. *glycinea*, which overwinters in seed and infected soybean debris. Lesions develop on cotyledons from infected seed and can spread to cause secondary infection on leaves. The pathogen enters the plant through stomata or wounds. The bacterium is spread from infected tissue by wind-blown rain and during cultivation or spraying when the foliage is wet. Seeds can be infected through the pods during the growing season. Windy, cool, rainy weather at temperatures of 75 to 79°F favor the development of bacterial blight whereas hot, dry weather suppress its development.

Management of this disease is primarily dependent on cultivars that are resistant to bacterial blight. Cultural management practices consist of planting high-quality, disease-free seed and using tillage practices that lead to rapid decomposition of crop residue. Narrow row widths and high plant populations should be avoided in fields with a history of bacterial blight.