

**What is brown spot?** Brown spot of soybean, also referred to as Septoria leaf spot or Septoria brown spot, is a common and usually relatively minor foliar disease of soybean in Wisconsin. Brown spot typically does not lead to significant yield loss in soybeans produced in the state, although yield losses of up to 15% have been reported from other areas of the US. In Wisconsin, brown spot tends to be more prevalent on soybeans that are under stress [e.g., stress due to drought, low fertility (particularly low potassium), high insect feeding, or other diseases such as soybean cyst nematode].

**What does brown spot look like?** The most typical symptom of brown spot is the formation of angular, reddish-brown spots (pinpoint to 1/8 inch in diameter) on both primary and trifoliate soybean leaves. Small, roughly spherical pycnidia (reproductive structures) of the causal fungus (visible with a hand lens) form in the brown areas. The pycnidia often ooze strands or masses of tannish fungal spores. When brown spot is severe, plants may begin to defoliate from the ground up. The disease is often more prevalent where drainage is poor.

**Where does brown spot come from?** Brown spot is caused by the fungus *Septoria glycines*, which survives in residue from previously diseased soybean crops. The fungus can also survive on diseased seeds. Brown spot tends to be more common during warm, wet weather, and when relative humidity is high.

**How can I save a soybean crop with a brown spot?** Brown spot is not a lethal disease, and in Wisconsin, it rarely leads to economic loss. However brown spot is more prevalent, and can be yield limiting, in late planted soybeans and in early maturing soybean varieties. Fungicide treatments for brown spot are typically neither warranted nor economical.

**How can I avoid problems with brown spots in the future?** Brown spot is best managed through proper rotation. DO NOT grow soybeans continuously in the same field, but rotate soybeans with other crops for at least one year to allow time for soybean residues to naturally decay. Tillage techniques that bury crop residue and promote more rapid decay of residues that harbor the brown spot pathogen may also help provide control. Also, avoid using seed that has been produced in fields with high levels of the disease. Finally, reduce other stresses on your soybeans that may predispose plants to brown spot. Plants that are properly fertilized, have sufficient water and are insect- and pathogen-free are less likely to develop the disease

**Symptoms of Brown Spot?** Brown spot in rice, caused by the fungus *Cochliobolus miyabeanus* (formerly *Bipolaris oryzae*), appears as small, circular or oval lesions on leaves, stems, and grains. Initially, these spots are light brown with a grayish center, but as they mature, they turn dark brown with reddish-brown margins. The disease primarily affects seedlings, reducing their vigor and leading to poor tillering. In severe cases, numerous lesions coalesce, causing extensive leaf blight, which hinders photosynthesis and weakens the plant. Brown spot also affects panicles, resulting in shriveled and discolored grains, leading to yield loss and poor grain quality. Environmental factors such as nutrient deficiency (especially potassium and nitrogen), drought stress, and high humidity favor its spread. The disease is common in poorly managed

fields and can lead to significant economic losses if not controlled through proper field sanitation, balanced fertilization, resistant varieties, and fungicide application when necessary.