Soybean Diseases: An Aid to Identification and Control

Purdue University Cooperative Extension Service
SOYBEAN DISEASES
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SOYBEAN DISEASES
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1. BACTERIAL LEAF DISEASE, commonly known as wildfire and caused by the bacterium Pseudomonas tabaci, occurs mainly in southern Indiana. This disease is distinguished from the other bacterial leaf blights by the broad yellow band surrounding the dark brown lesions. Bacterial blight, caused by Pseudomonas glycinea is more widespread than wildfire. Bacterial blight is distinguished by the lack of a yellow band surrounding infected tissues and lesions which are much smaller than those of wildfire. Infected leaves are characteristically tattered as if damaged by wind or hail.

2. DOWNY MILDEW, caused by the fungus Peronospora manshurica, is widespread in Indiana. This disease is seed-borne. It is characterized by indefinite, yellowish-green areas on the upper leaf surface that later become grayish-brown to dark brown lesions surrounded by yellowish-green margins.

3. CERCOSPORAA LEAF SPOT, commonly called frogeye leaf spot, is caused by the fungus Cercospora sojina. This disease is characterized by gray or light tan lesion surrounded by a reddish-brown border. The fungus may attack stems, pods and seed in addition to leaves.

4. POD AND STEM BLIGHT is caused by the fungus Diaporthe phaseolorum var. sojae. This disease occurs throughout Indiana as plants near maturity. It is distinguished by small, black fruiting bodies of the fungus that appear on infected stems and pods. The fruiting bodies are arranged in linear rows on affected stems, and scattered over affected pods. This disease is often associated with poor quality seed.

5. SOUTHERN STEM BLIGHT, caused by the fungus Sclerotium rolfsii, does not occur in Indiana. A similar disease caused by Sclerotinia sclerotiorum, and known as Sclerotinia stem rot, occasionally occurs in isolated fields. Sclerotinia stem rot is characterized by the white cottony mass of fungus growth, usually on the lower portion of the stem. Within the mold growth, hard, black sclerotia are formed. In Figure 5, the sclerotia of the Southern stem blight fungus are shown to be small and tan to brown. The black sclerotia of the Sclerotinia fungus may also be formed within the pith of the stem.

6. ANTHRACNOSE, caused by the fungus Glomerella glycines or Colletotrichum truncatum, causes indefinite brown lesions on stems and pods. These lesions should not be confused with those of stem canker. During wet weather, numerous, small, black dots (acervuli) may be seen within the anthracnose lesion. Anthracnose occurs infrequently in Indiana.

7. NEMATODE DAMAGE. At the present time, only the Soybean Cyst Nematode is economically important in Indiana. Other nematodes have either not been reported in Indiana or cause only insignificant damage in isolated fields.

8. PURPLE SEED STAIN, caused by the fungus Cercospora kikuchii, greatly reduces seed quality of susceptible varieties. In addition to affecting the seed, the fungus also attacks the leaves, stems and pods of susceptible varieties. Discoloration of seed varies from pink or light purple to dark purple, and ranges from a small spot to the entire seed coat. Cracks in seed coat often occur and give the seed a rough, dull appearance. Varieties such as Harasoy and Amsoy seem to be especially susceptible.