

Frogeye Leaf Spot Facts

- Caused by *Cercospora sojina*, a fungus found throughout the world
- In the US, frogeye leaf spot is most common in the mid-South, Mississippi Delta and Southeastern soybean growing areas
 - Development of resistant varieties by Pioneer soybean breeders has limited disease impact in these areas
- In the past decade, it has been detected in soybean fields in the Midwest US
- Infects leaves, stems and pods of soybeans
- Disease development is favored by warm, humid conditions and frequent rains following disease onset can lead to serious epidemics
- Dry weather severely limits disease development

Disease Cycle

- Disease survives and overwinters in soybean residue and seeds
- Initial infection occurs as spores produced on infected residues or cotyledons are spread by splashing rain or wind
- Secondary infection occurs as lesions on the soybean plant produce spores
- Diseased soybean residue (leaves, stems and pods) left on soil surface provides inoculum to continue disease cycle in next soybean crop

Impact on Crop

- Yield losses depend on disease severity and varietal susceptibility
 - With severe leaf blighting on susceptible varieties, losses may approach 30 percent
 - Minor symptoms on moderately resistant varieties unlikely to result in economic losses

Leaf Symptoms

- Symptoms begin as small, circular-to-somewhat-irregular spots on the upper surface of the leaf
- These dark, water-soaked spots develop into lesions with dark brown centers surrounded by red or dark reddish-brown margins
- As lesions age, the center becomes light brown to light gray, and the border remains dark
- Leaf lesions may coalesce to form larger irregular spots on the leaf
- Heavily diseased leaves may wilt and drop prematurely, or dead tissue may weather away, leaving tattered leaflets



Stem, Pod and Leaf Symptoms

- Stem lesions are reddish brown with a narrow, dark margin
 - The centers of the lesions become brown to gray with age
- Lesion development on pods is similar to that of the leaves
 - Symptoms begin as water-soaked spots that progress to dark reddish-brown lesions
 - Lesions are circular to elongated in shape, and may appear slightly sunken and lighter-colored in the center
- The fungus can also grow through the pod wall to infect maturing seeds
 - These seeds may show cracking of the seed coat and discoloration ranging from small specks to large blotches



Management – Resistant Varieties

- Plant resistant soybean varieties if fields had frogeye leaf spot in recent years
- Pioneer rates its varieties and makes ratings available to customers
- Ratings range from 2 to 9 (9 = resistant) indicating excellent resistance is available in elite soybean varieties
- Select varieties with resistance to most important diseases first
 - Soybean cyst nematode, sudden death syndrome, and Phytophthora root rot may present a greater risk than frogeye leaf spot
- Select for other key traits required for your fields
- Your Pioneer sales professional can help you select suitable varieties for your farm

Other Management Practices

- Consider tillage to reduce infected residue left on soil surface. Reduced inoculum levels can delay the onset and spread of the disease
- Rotate crops to break the disease cycle and reduce disease inoculum
- Apply a foliar fungicide if disease levels exceed thresholds established by your state extension soybean disease specialist
 - Common fungicides labeled for control of frogeye leaf spot on soybeans include Headline®, Quadris® and Stratego®
 - Be sure to read and follow all label instructions

® Headline is a registered trademark of BASF Corporation.

® Quadris is a registered trademark of a Syngenta Group Company.

® Stratego is a registered trademark of Bayer AG.



PIONEER
A DUPONT BUSINESS

Pioneer Agronomy Sciences ®, TM, SM Trademarks and service marks of Pioneer Hi-Bred. © 2010, PHII