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Target Spot in Soybeans

Target Spot Facts

- Target Spot is caused by the fungus *Corynespora cassiicola.*
    - This is **not** *Bipolaris sorghicola,* which causes target spot of grain sorghum.
- The pathogen can overwinter in debris for up to two years.
- It is found in tropical and subtropical regions. In the U.S. it occurs in the Midsouth and southern states.
- *Corynespora cassiicola* has hundreds of alternate hosts including cotton, tomato, cucumber, cowpea, and sesame.

Figure 1. Defoliation of soybeans due to target spot. *Photo courtesy of Brewer Blessitt.*

Identification and Symptomology

- Symptoms of target spot will appear in the lower canopy first as spores spread from residue, typically around canopy closure.
- The most distinctive characteristic of target spot is concentric lesions that form on leaves (Figures 2 and 3).
- Less distinct lesions will be reddish brown with a chlorotic halo.
- Dark brown specks to longer lesions can be found on stems, and miniscule circular purple/black lesions with brown margins can be seen on pods.
- Plant defoliation can occur if disease severity is high enough.

Conditions Favoring Disease

- Humidity greater than 85% and warm temperatures are required for initial infection.
- Multiple consecutive days of rainfall increase disease incidence.
- Dense canopies, high soybean populations, and tight row spacing limit airflow, favoring disease development.
- Soybean monoculture, or rotation with cotton, allows the pathogen to persist in agricultural systems.

Figure 2. Soybean leaf demonstrating variability of lesion size and appearance**,** note yellow halos. *Photo courtesy of Brewer Blessitt.*

Management Considerations

- Historically, target spot rarely caused significant yield loss in soybeans; however, losses have been reported with greater frequency in recent years.
- Yield loss potential is highly dependent on the degree and timing of defoliation caused by target spot. In a defoliation study, yield loss of up to 10% occurred with 60% defoliation at R5, but only 5% if the same occurs at R6 (Faske, 2016).
- Yield losses due to target spot alone are often difficult to determine due to the presence of other pathogens.
- Rotation to non-host crops like corn, sorghum, grain, or rice can help reduce the inoculum load in a field.
- A fungicide treatment may be justified when weather conditions are highly favorable for disease development. Application timing is key to suppress disease development before it progresses up the canopy.

Figure 3. Variability of zonate "target" lesions. *Photos courtesy of Brewer Blessitt.*

Faske, T. (2016, November 02). *Target spot of soybean: What do we know?* Retrieved from U of A Division of Agriculture Research & Extension.

The foregoing is provided for informational use only. Please contact your Pioneer sales professional for information and suggestions specific to your operation. Product performance is variable and depends on many factors such as moisture and heat stress, soil type, management practices and environmental stress as well as disease and pest pressures. Individual results may vary.

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