Assessing Risk to Target Spot in Georgia

A draft of a risk-management tool to be assessed and refined in Georgia/Revised 12 February 2013

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Factor with the **HIGHEST impact** on increased risk to target spot:

- **a. Location of the field.** The risk to significant outbreaks of target spot seem greatest in SW Georgia, SE Alabama and NW Florida. 25 pts
- b. **Location of the field.** Field is located in central and SE Georgia. 15 pts
- c. **Location of the field.** Field is located in eastern Georgia. 5 pts

Factors with **MODERATE impact** on increased risk to target spot:

1. **Field History.** Target spot is likely to occur again if fields where it has been severe in the past if environmental conditions are favorable.
   - a. **Target spot has been severe** in the field in the past. 15 pts
   - b. **Target spot has been observed** but has not been severe. 5 pts
   - c. **Target spot has not been observed.** 0 pts

2. **Rank cotton growth.** The development and spread of target spot seems closely tied to extended periods of leaf wetness. Foliage within the dense canopy of cotton stays wet longer and is thus more prone to target spot.
   - a. **Rank cotton with dense canopy.** 15 pts
   - b. **Cotton with complete closure but growth well managed.** 5 pts
   - c. **Cotton with open canopy and good airflow.** 0 pts

3. **Irrigation.** As above, irrigation can both improve the growth of the cotton plants and extend periods of leaf wetness, thereby increasing the risk to target spot.
   - a. **Cotton irrigated during day, extending dew period from previous night.** 10 pts
   - b. **Cotton is irrigated at night or early morning to minimize leaf wetness period.** 5 pts
   - c. **Cotton is not irrigated.** 0 pts

4. **Extended periods of rainfall and cloudy weather.** Such conditions create conditions where disease is favored.
   - a. **Frequent periods of extended rainfall of cloudy conditions.** 10 pts
   - b. **Rainfall events "normal" for the season.** 5 pts
   - c. **Growing season is extremely dry.** 0 pts

Factors with **LOW** impact on increased risk to target spot**:**

1. **Tillage.** Spores of the target spot pathogen, *Corynespora cassiicola*, will survive in the crop debris from previous cotton crops. Spore survival is expected to be longer in reduced-tillage conditions and spores may also be splashed to cotton leaves easier from such debris.

a. **Conservation tillage/reduced tillage.** 5 pts
b. **Conventional tillage with deep turning.** 0 pts

2. **Crop rotation.** Although this remains to be proven, it is likely that target spot on cotton will be more severe in fields where cotton is planted behind cotton or in in short rotations. This is because the spores of the pathogen will survive among the debris from recent cotton crops.
   a. **Cotton planted behind cotton.** 5 points
   b. **At least one year of another crop between cotton crops.** 0 points

Factor that **MAY have impact** on risk to target spot**. Variety Selection.**

Variety selection. It is likely that some varieties of cotton may be more susceptible to target spot than are others. However it is not clear whether such an increase in susceptibility is because the pathogen can more easily infect the leaves of the cotton plant or because of the growth habit of the variety tends to be more-rank and thus prone to longer periods of leaf wetness. Also, the exact relationship between defoliation and yield loss is not completely understood. For example a variety with more defoliation than another variety may not necessarily yield less.

YOUR RISK

High Risk: Growers with the greatest risk to target spot and most likely to see some benefit to use of a fungicide program are those with a total risk of **40 points or more**.

Moderate Risk: Growers at **moderate risk to target spot** and could benefit from the use of a fungicide are at risk levels from **25 to 35 points**.

Low Risk: Growers with the **least risk to target** spot are those with risk levels below **25 points**.

Timing of fungicide applications: Growers are advised to begin scouting their fields at the approach of first bloom to determine if target spot is present in the crop. From research conducted in Georgia, the optimum timing for an initial fungicide application is sometime between the first and third week of bloom; an additional fungicide application may be needed approximately 3 weeks after the first application.