



## Bacterial Blight in Cotton

- Bacterial blight in cotton, also known as seedling blight, angular leaf spot, and boll rot, is caused by *Xanthomonas axonopodis* pv. *malvacearum* (formerly referred to as *Xanthomonas campestris* pv. *malvacearum* and *Xanthomonas malvacearum*).
- In the 1940s and 1950s, bacterial blight caused severe damage throughout cotton-growing areas until the release of resistant cotton cultivars starting in 1955.
- The severity of this disease is greatly influenced by environmental conditions as the disease thrives in extremely warm, humid environments, which some regions are experiencing this growing season.

In cotton, bacterial blight symptoms are first observed as small, water-soaked lesions that are noticeable on the upper and lower leaf surfaces. The lesions appear to be angular due to the restrictions by veins within the cotton leaf.<sup>1</sup> Other parts of the cotton plant may become infected following the production of secondary inoculum. The systemic spread of infection to leaf petioles, stems, and branches may result in black cankers (“Blackarm” lesions) that can cause portions of the plant to die above the canker. Boll lesions first appear to be “water-soaked” and round, and later sunken and dark brown or black.<sup>1</sup> Low levels of bacterial blight are commonly observed and

reported in various cotton-producing regions; however, symptoms of bacterial blight will be most severe and spread when humidity is high and air temperatures average 86° to 95°F.<sup>2</sup>

The bacterium is capable of overwintering on contaminated debris in the soil. Wind, water, and thunderstorm fronts can disseminate the bacterium beyond the initial point of infection.<sup>3</sup> The pathogen enters host plants through open stomata or wounds. Blowing dust and sand events have been linked to bacterial blight epidemics.



Figure 1. Cotton boll with bacterial blight lesion.



Figure 2. Cotton leaf infected with *Xanthomonas axonopodis* pv. *malvacearum*, commonly known as bacterial blight of cotton. Wright, R., Texas Tech University.

While no fungicides are recommended for bacterial blight, growers may choose to apply growth regulators to prevent further rank growth of their crop. Dense, rank growth can disrupt air flow within the canopy creating a conducive environment for disease development. There are currently no products labeled for use against the disease. Because blight can disseminate rapidly in warm, wet conditions, any management practice to promote drying of cotton leaves may help reduce the development of blight. Limit the movement of equipment through wet fields, to reduce

the spread of blight in season.

Plan to harvest fields with bacterial blight first and shred cotton stalks as early as possible. Contaminated plant residue will decompose faster when incorporated into the soil.<sup>3</sup> After harvest, the pathogen may be isolated from dry, undecomposed plant debris after being left for five months in the field.<sup>3</sup>

As a preventative measure, select cotton varieties with bacterial blight resistance the following year or plant to a different crop.

#### Sources

<sup>1</sup> Koening, S. 2004. Bacterial blight of cotton. North Carolina State University Plant Pathology Extension. <http://www.ces.ncsu.edu>

<sup>2</sup> Cotton pests: scouting and management. 2004. University of Missouri. IPM1025. <http://extension.missouri.edu>

<sup>3</sup> Thaxton, P.M. and El-Zik, K.M. 2001. Bacterial blight. Compendium of Cotton Diseases. 2nd edition. 34-35. Web sources verified 7/28/15.150727135907

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**For additional agronomic information, please contact your local seed representative.**

**Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** ©2016 Monsanto Company. 07272016CRB 150727135907