

**AN OLD FOE: THE RE-EMERGENCE OF BACTERIAL BLIGHT****Tom Allen****Delta Research and Extension Center, Mississippi State University  
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Bacterial blight of cotton, caused by *Xanthomonas citri* pv. *malvacearum*, continues to be an important yield-limiting disease throughout the United States' cotton production system. The bacterium responsible for bacterial blight produces characteristic symptoms on all parts of the cotton plant including a water-soaked lesion on leaves that presents in some cases as angular lesions. Additional symptoms occur on bracts, petioles and stems (as blackarm), and circular water-soaked lesions on bolls. Since 2011, an increased incidence of bacterial blight has been observed throughout the southeastern U.S. Substantial bacterial blight epidemics were observed in the Mid-southern U.S. during 2011 and 2012, with specific instances of the disease occurring in Arkansas and Mississippi. Since that time, incidence of bacterial blight has increased in the southeastern U.S., with substantial outbreaks reported from the cotton production systems in Georgia, Louisiana, and Texas as well as smaller scale outbreaks observed in Alabama, Missouri, Oklahoma, South Carolina, and Tennessee between 2011 and 2017. In-season management options once the disease is observed are non-existent; however, bacterial blight-resistant varieties remain an important management strategy for cotton farmers especially in continuous cotton situations. In addition, tillage and crop rotation remain valuable management practices. However, many cotton farmers are unable to rotate and some important varieties with resistance to additional cotton pests are susceptible to bacterial blight and therefore present a problem in situations where varieties are relied on for the management of specific cotton pests. The most important method of transmission continues to be from seed carrying the bacterium as either an internal contaminant or a contaminant on the seed coat. Research conducted following the 2011 outbreak of bacterial blight in Arkansas by Rothrock et al. (2012), considered the role of seed transmission in seed lots representing bacterial blight-susceptible varieties. The seed lots chosen represented four varieties and were based on observation of bacterial blight in fields planted to the specific varieties. In all, Rothrock et al. (2012) reported that 41% of the seed lots surveyed contained the bacterium as a contaminant internal to the seed coat. Additional sampling determined that the bacterium was present as an external contaminant on approximately 9% of the seed lots tested. Seed has long been known to be one of the main sources for infection and an important mechanism to move the organism to fields where the disease has not been observed for extended periods of time. In addition to the report from Arkansas, research trials with inoculated cotton were conducted in Stoneville, MS during 2011 (see: Golden et al. 2012). Cotton varieties contained in the Mississippi State University Official Variety Trial were inoculated with the bacterial blight bacterium at first white flower and observations of the incidence and severity of disease were made post-inoculation. Inoculated plots were harvested at physiological maturity. Averaged across all varieties, a 26% decrease in lint yield was observed between inoculated and non-inoculated plots. Given the continued issue with bacterial blight, plant pathologists continue to address the disease by tracking locations where the disease occurs and continued research is being conducted to screen for varietal responses to the organism.

**References**

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- Rothrock, C. S., Kirkpatrick, T. L., Barber, T., Coker, C. M., and Smith, S. E. 2012. The resurgence of bacterial blight of cotton in Arkansas. Proceedings of the Beltwide Cotton Conferences, Orlando, FL January 3-6, 2012.