

Epidemiology of Bacterial Blight of Cotton: 2011 to 2015

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Bacterial blight of cotton (*Xanthomas citri* pv. *malvacearum*), prior to the early 1970s, was a major disease of cotton. Economic losses associated with bacterial blight prior to the implementation of acid-delinting were common in the Mid-southern United States on an almost annual basis. Since that time, bacterial blight has been a disease of minimal importance both economically and observationally, at least in the Mid-south. Even though bacterial blight is observed on an annual basis in scattered geographies, some states only report a trace amount of the disease, generally judged to be a percent loss of 1×10^{-9} depending on the individual assembling the loss estimates. However, annually bacterial blight occurs with a high frequency in parts of Texas and to a lesser extent Oklahoma mostly due to continuous cotton production in fields with a history of the disease. The bacterium responsible for bacterial blight has an extremely limited ability to survive in soil since competition with additional soil organisms in tilled situations can make survival between seasons difficult. The most notable form of inoculum has widely been reported to be either on or within the seed. In 2011, a widespread epidemic of bacterial blight was observed in Arkansas and Mississippi. Several major cotton varieties from multiple companies were observed to be infected. In Arkansas, the counties that reported bacterial blight were in the eastern Delta (n=6). In Mississippi, the greatest observed portion of the epidemic occurred in several counties bordering Clarksdale, MS (Coahoma County); however, 11 total counties reported observing the disease from as far south as Washington County and as far east as Monroe County. Aside from the major outbreak in AR and MS, only a single county in the MO bootheel was observed to contain bacterial blight infected cotton. Prior to the 2012 season, bacterial blight infested seed was reported to have been the initial point of infection for the epidemic in Arkansas. In 2012, even though some of the same fields were observed to be infected, additional counties and states reported observing the disease. In all, bacterial blight was observed in one additional state (TN) and from 10 additional counties. However, 14 counties that reported the disease had infected plant material in both 2011 and 2012, with the majority of those counties occurring in MS. By 2015, the number of states reporting bacterial blight had increased from four in 2011 to eight states reporting the disease from at least one county or parish. Since 2011 the disease has been observed more regularly in AR, MO, MS, and TX, and to a lesser extent in AL (2015), FL (2015), GA (2014 and 2015), and LA (2014). Reports of bacterial blight from TN were scarce and occurred more regularly in 2011. Estimated yield losses as a result of bacterial blight in each of the states have been reported in the annual disease loss estimates sponsored by the National Cotton Council.