

## BACTERIAL BLIGHT OF COTTON

Bacterial blight is caused by the bacterium, *Xanthomonas citri* subsp. *malvacearum*. It is seedborne, but can also survive on residue from infected crops. The disease is no longer a chronic problem in the United States because of the deployment of resistant varieties and acid-delinted seed. Yield-damaging outbreaks in susceptible varieties occur if weather conditions during the season are favorable for disease development, specifically, early-season rain that spreads the pathogen throughout the field, followed by heavy, wind-driven rains that occur after canopy formation, with periods of high humidity and temperature.



**Fig. 1. Major symptoms of bacterial blight, showing angular leaf spots delimited by veins (left side) and tissue watersoaking, with vein blight (right side).**

**Field diagnosis:** Although symptoms can occur during the seedling stage, the definitive foliar symptoms of angular leaf spots, with watersoaking are seen later (Fig. 1). These lesions are restricted by veins. Additionally, small, circular brown lesions can occur with the angular leaf spots.



**Fig. 2. Less-common symptoms: White, dried exudate associated with lesions (left side) and chlorotic halos surrounding lesions (right side).**

Less-common foliar symptoms include white, dried exudate (dried bacteria) associated with lesions and chlorotic halos surrounding lesions (Fig. 2). If these symptoms occur,

angular leaf spot symptoms will also occur in a field. The bacterium can also cause blighting of the stem (“blackarm”) and petioles, which can lead to girdling and breakage (Fig. 3).



**Fig. 3. Symptoms of bacterial blight on a stem (“blackarm”) (left side) and petiole (right side).**

If wet weather persists during the growing season, the disease can progress to bracts and flower buds, possibly causing shedding. On developing bolls, circular, water-soaked lesions can occur on bolls (Fig. 4). These bolls can rot or may fail to open properly.



**Fig. 4. Water-soaked lesion on boll.**

**Management:** Fungicides are not effective against this disease. Current-season management approaches include maintaining adequate nitrogen fertility and adjusting furrow or sprinkler irrigation, to minimize leaf wetness and high humidity within the canopy.

Since the pathogen can persist to the next season on crop residue and infect seedlings as they contact the residue, the field should be rotated out of cotton for at least one season. The pathogen is not known to infect other plant species, including weeds.

Crop residue should be plowed into the soil to hasten its decomposition. The bacterium can’t survive in soil.

Resistant varieties can be used, but the development of new races of the pathogen remains a possibility.

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