

PhytoGen® brand W3FE varieties deliver resistance to bacterial blight

PhytoGen® brand varieties with WideStrike® 3 *Insect Protection* and the Enlist™ cotton trait (designated by W3FE) deliver resistance to bacterial blight to help cotton thrive — even under extreme disease pressure. In addition to W3FE varieties, growers can choose from numerous PhytoGen brand WRF varieties with bacterial blight resistance. Contact your local sales representative or cotton development specialist to determine which variety is the right fit for your farm.

Bacterial blight — characteristics, causes and solutions

Bacterial blight, a disease leading to defoliation and boll rot in cotton plants, can occur throughout the Upland Cotton Belt. The disease also has been confirmed in most other cotton-growing geographies. While a large majority of cotton varieties are susceptible to bacterial blight, all W3FE PhytoGen brand varieties are resistant to the disease. Growers should consult with their PhytoGen cotton development specialists for more details on PhytoGen brand W3FE varieties.



Figure 1. Water-soaked lesion traveling down the vein.
Note the angular leaf lesions bound by leaf veins.



Figure 2. Water-soaked lesions on leaves resemble “bruising.”

Characteristics of bacterial blight

So, what is bacterial blight? Also referred to as angular leaf spot, it is a disease caused by the bacterium *Xanthomonas citri* pv. *malvacearum*. Symptoms include angular and/or water-soaked lesions on leaves that ultimately result in defoliation. Additional characteristics include heavy, water-soaked stains traveling down the veins of the leaves.

Symptoms of bacterial blight can occur on leaves throughout the canopy, bracts, stems and petioles. Although not common, in severe cases, it may also appear on the bolls. Generally, bacterial blight is most severe when temperatures are between 86 and 97 F and when relative humidity is above 85 percent. Bacterial blight is rarely a problem in dry environments or those with relatively low humidity.

Mature lesions from bacterial blight have a necrotic center and form angular lesions (between small leaf veins). New infection symptoms resemble water-soaked lesions that will appear as darker green spots on the leaves, similar to a bruise on the leaf. In contrast, most fungal leaf spots create concentric ring lesions that cross veins, resulting in round or oblong lesions, not angular, as in bacterial blight.

Transmission of bacterial blight

Although insects are listed as a possible means of transmitting the disease, they are **NOT** the only means of transmission. Bacterial blight can be transmitted through physical contact, such as equipment, or in water via rainfall or irrigation. Initial infection can come through residue in the field, transmission from other affected fields or seed that is infected with the pathogen. It is not airborne, but it can be transmitted via water or human transmission/contaminators while walking from field to field.

You've got bacterial blight. Now what?

If bacterial blight is found in fields, state Extension specialists recommend producers continue to manage the crop to optimize yields. This includes normal irrigation and fertility practices.

Be mindful to continue irrigation. In many cases, yield loss due to inadequate soil moisture will likely exceed yield loss from bacterial blight. Attempting to conduct irrigation during nighttime hours, if at all possible, may reduce the spread of the disease because dew would likely already be present.

The extent of the crop loss in any given field will be determined by the distribution of the disease in the field, the timing of the infection, the susceptibility of the cultivar and the weather conditions from infection until harvest.

Growers should note that because this disease is due to a bacterial pathogen, the application of a fungicide will **NOT** provide control of the disease. Where overhead irrigation is present, the disease will likely continue to spread with the simulated rain splash associated with pivot irrigation.

Plant resistant varieties

Experts also recommend planting a resistant variety. Great options for producers who have had bacterial blight are resistant varieties from PhytoGen. They are resistant to the pathogen and yield well under furrow or pivot irrigation. Tillage and crop rotation to a nonhost crop, such as corn, grain sorghum, soybeans, peanuts or rice, also are acceptable management practices. Bacterial blight resistance can be found in all PhytoGen® brand W3FE varieties.

Learn more

For more information on bacterial blight, contact your state Extension cotton specialist or plant pathology specialist. As always, your PhytoGen cotton development specialist is available to discuss options and contact information can be found at www.PhytoGen.com.

Has your farm had bacterial blight in the past?

Here is what the experts recommend:

1. Plant a resistant variety.
2. Rotate crop — switch to a nonhost crop.
3. Deep till to turn the soil.

Remember, in most cases, bacterial blight affects leaves in the lower part of the canopy, so often under normal conditions, this disease develops no further and no yield loss is observed. Lower canopy cotton leaves have an effective life of about 50 days. They naturally senesce and fall off prior to chemical defoliation. However, the higher in the canopy the disease progresses, especially when it infects developing bolls, the greater likelihood of reduced yield.

