

Bacterial blight (exotic/hypervirulent races)

Compiled by Chris Anderson (NSW DPI)

What is Bacterial blight?

Bacterial blight (caused by the bacterium *Xanthomonas citri* subsp. *malvacearum*) cost Australian cotton farmers millions of dollars in the 1980's. Most cotton varieties now grown in Australia have excellent resistance to local races of the blight pathogen and only the older US varieties and some cultivars of Pima are susceptible.

Two races that originated in parts of Africa are described as hypervirulent. These races are not present in Australia and it is expected that they would be pathogenic on all Australian varieties.

What does it look like?

The bacterium affects the plant above ground with disease symptoms on the leaves, stems and bolls.

Leaves often display angular water-soaked lesions, sometimes extending along the veins. Symptoms are usually more common on lower leaves than on upper leaves. Lesions dry and darken with age and leaves may be shed prematurely resulting in extensive defoliation.

Stems display a 'black arm' symptom with black lesions spreading along the stems eventually girdling them. Bolls are often infected at the base (under the calyx) but may also be infected at the tip. As the boll matures the lesions dry out and prevent normal boll opening.

What can it be confused with?

Alternaria leaf spot or spray drift. Exotic races of Bacterial blight produce the same symptoms as races already present but will infect resistant cotton varieties.



Lesions and localised discoloration on cotyledons caused by Bacterial blight infection

Stephen Allen, CSIRO



Bacterial blight symptoms on upper and lower leaf surface, along veins and on bolls

Stephen Allen, CSIRO



'Black arm' symptom in cotton

Stephen Allen, CSIRO





What should I look for?

Classic symptoms of Bacterial blight including angular water-soaked lesions on the leaves, bracts and bolls and “black arm” on the petioles. Report any Bacterial blight symptoms on previously resistant cotton varieties.

How does it spread?

Bacterial blight can be spread within the crop by rain splash from crop residues or infected leaves. Once established at the growing points of the plant, all leaves produced from this point become infected.

The bacterium is also seed-borne, allowing spread over long distances. Under some circumstances the pathogen can survive in plants without showing symptoms.

Where is it now?

This disease has been reported from almost all cotton growing countries. The hypervirulent races, which would threaten current Australian cotton varieties, are currently found in North Africa.

How can I protect my farm from Bacterial blight?

Check your farm frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common cotton pests so you can tell if you see something different.

If you see anything unusual, call the Exotic Plant Pest Hotline

**EXOTIC PLANT PEST HOTLINE
1800 084 881**



Bacterial blight symptoms on bolls and bracts

Stephen Allen, CSIRO



Early water-soaked symptoms on the base of bolls

Stephen Allen, CSIRO



Angular lesions on leaf and petiole (black arm)

Stephen Koenning, North Carolina State University

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