



# Alternaria leaf spot

## The IDM fast facts series.

Alternaria leaf spot is primarily a leaf disease caused by *Alternaria* species, including *A. macrospora* and *A. alternata*, which were identified on Australian cotton.

The pathogens can be carried over on infected cotton residues from the previous season and are spread by air-borne spores. *A. macrospora* is largely limited to cotton and some weeds; in contrast, the host range of *A. alternata* is fairly wide.

### The pathogen

*Alternaria* species survive on undecomposed cotton residues. The pathogen spreads via air-borne spores which may be also dispersed by splashing onto healthy tissue.

The production of conidia within leaf spots as well as the infection of healthy tissue is favored by either repeated heavy dews or wet weather and temperatures of about 27°C.

The development of symptoms, as mentioned below, is favored by any physiological or nutritional stress e.g. heavy fruit load, premature senescence or low potassium.

### Symptoms

- Brown, grey brown or tan lesions (spots) on cotyledons, leaves, bracts and bolls varying from 1 to 10mm in diameter.
- Rapid defoliation can occur when a susceptible crop is exposed to favourable conditions.
- Affected leaves develop an abscission layer, senesce and drop to the ground.
- Symptoms generally more severe on lower leaves.
- Plants are most susceptible at the seedling stage and late in the season when the crop begins to 'cut out', especially following premature senescence.
- Lesions can have dark brown or purple margins and sometimes have obvious concentric zones.

### Minimising the disease

- **Destroy residues from previous crops.** To minimise leaf spot problems, carryover of *Alternaria* may be reduced by the incorporation and breakdown of cotton residues between consecutive cotton crops. Reducing the area of back to back cotton will reduce problems.
- **Avoid plant stress.** Avoidance of plant stress, especially potassium deficiency, delays primary infections and reduces leaf spot severity.
- **Chemical controls.** Minor *alternaria* symptoms do not typically require control. In response to recent emergence of cases where the disease is more severe, the industry has in place a permit (NUMBER – 82660) for use of Folicur 430 SC fungicide plus other registered products containing: 430 g/L Tebuconazole as their only active constituent control of *alternaria* leaf spot disease in cotton varieties. This permit is for use in crops grown in the Southern cotton growing valleys: Bourke, Gwydir, Lachlan, Macintyre, Macquarie, Murrumbidgee, Murray and Namoi Valleys only. Refer to the permit for critical use patterns. DO NOT harvest for 42 days after final spray application. DO NOT graze treated crops or stubble or feed gin trash to livestock.

### Research

NSW DPI, as part of the CRDC project *Innovative Solutions to Cotton Disease*, are looking to screen potential fungicidal candidates for a range of diseases including *Alternaria*. Led by Duy Le, this project is also conducting a range of laboratory studies to understand this pathogen.

In mid-2017, *Alternaria* was also identified by Cotton Australia and CRDC as a priority registration gap in the AgVet collaborative forum. Through this process the industry is able to raise issues with chemical companies.

### For more

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