

Grey mildew

detected in the Northern Territory

Northern Australia cotton growers (NT, Nth Qld, WA) are encouraged to monitor and report any unusual symptoms in their crops, following the recent confirmation of grey mildew disease, caused by the fungal pathogen *Ramulariopsis* sp.

The disease has not been observed recently in Australia but has been observed in most cotton-growing countries. From public databases, *Ramularia* (or *Ramulariopsis*) have been reported from *Gossypium* (cotton) from Western Australia (Doepel 1969, reported in Shivas 1989) and from Queensland (Simmonds 1966).

Ramularia / Ramulariopsis / Grey mildew / Frosty Blight / Areolate mildew

Grey mildew of cotton is a foliar disorder caused by *Ramulariopsis* sp. It produces distinctive fungal growth like other mildews and can be easily identified by the presence of white to greyish coloured spores on the underside of the leaf.

White or grey powdery growth may occur on the upper surface also. The infection generally starts in the more humid lower canopy but spreads to upper leaves and the entire plant may be affected. The affected leaves dry up from margin and cup inward. Leaves turn yellowish brown and fall off prematurely.

There is a notable distinction between *Ramulariopsis* and other mildews such as powdery mildew of cucurbits. *Ramulariopsis* sp. is known as a 'false mildew', as it can grow on nutrient media without the presence of a living host. Because of this ability to live on non-living organic residues, *Ramulariopsis* sp. can persist on decomposing plant material.

Favourable conditions

- The fungus requires temperatures of 20–30 °C with prolonged high humidity (>80%) and frequent rain for infection and disease development. However, cool weather and prolonged dewy periods can also trigger development of this disease.
- Close planting.
- Excessive application of nitrogen.



Disease cycle

- The disease can have ongoing cycles through a season.
- The primary method of infection is through spores from infected debris or volunteer and ratoon cotton. A secondary method of spread is through primarily infected leaves, but the fungus can also be moved by wind, rain splash, irrigation water and farm equipment.
- The pathogen survives out of season in infected crop residues.
- Perennial cotton plants and self-sown cotton plants also harbour the pathogen.



Management

- Bury infected crop residues
- Cultivate/kill volunteer cotton plants
- Avoid back-to-back cotton (plant a break crop)
- Avoid excessive application of nitrogen
- Consider planting densities and spacings that encourage air flow
- Overseas, this disease is managed with fungicides. However, in Australia, there is currently no registered control option.

Cotton Australia is investigating permit options.

Acknowledgements: Linda Smith (QDAF), Murray Sharman (QDAF), Stan Bellgard (NT Dept Industry, Tourism & Trade), Susan Maas (CRDC), Sally Ceeny (Cotton Australia).

References

Shivas, R.G. 1989. Fungal and bacterial diseases of plants in Western Australia. *J. Roy. Soc. W. Australia* 72: 1-62.

Simmonds, J.H. 1966. Host index of plant diseases in Queensland. Queensland Department of Primary Industries, Brisbane.

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ALL GROWERS - If you see anything unusual, call the Exotic Plant Pest Hotline: 1800 084 881

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