

VERTICILLIUM WILT IMPORTANT QUESTIONS WE NEED TO ANSWER

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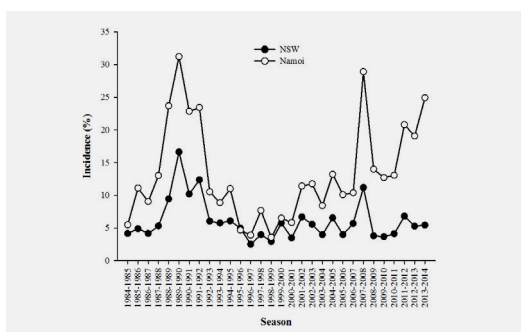
**Australian Government
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Questions, issues being addressed?

- Verticillium wilt issues that NSW DPI Pathology in the project Diseases of Cotton XI have been and are continuing to look at.
- Quantify the propagules of Verticillium in different field's soil.
- Quantify the relationship between Verticillium inoculum and symptoms.
- To find what the relationship between Verticillium and (soil/water) pH is.
- To see the effect of different water sources (bore water compared to river water) on Verticillium wilt.
- To see the effect of different irrigation systems (furrow compared to lateral irrigation) on Verticillium wilt.
- Potential interaction between field levels of black root rot and Verticillium wilt.
- Collection of reference cultures to determine VCG's present.

Research outcomes

Verticillium was observed in 38% of fields surveyed



GRAPH Verticillium Incidence (%) for NSW & Namoi from NSW DPI cotton disease surveys.

in NSW during the 2013-14 season. However, the average incidence was only 5.5% of plants infected. This can be compared with average incidences of 5.3%, 6.8%, 3.7%, 3.8% and 4.1% in the 2012-13, 2011-12, 2010-11, 2009-10, and 2008-09 seasons (respectively).

During the 2013-14 season the disease was observed in 91% of fields surveyed in the Namoi valley, 75% of fields in the Macintyre Valley, 54% of fields in the Gwydir Valley and 32% of fields in the Macquarie Valley where the average incidence of the disease was 24.9%, 2.0% 1.7% and 0.3% (respectively).

What impact will this have on the Australian cotton industry?

Verticillium wilt has been recorded in the NSW cotton disease surveys since 1984-1985. With the highest levels recorded in the Namoi valley. Areas with severe symptoms of Verticillium wilt were observed in several fields over the last three seasons. These areas have caused big yield reductions in these fields.

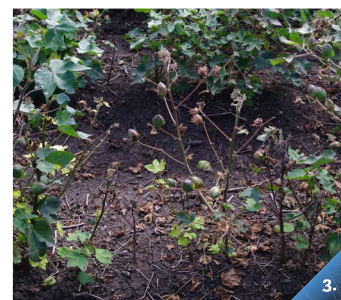
We will be continuing our collection of Verticillium reference cultures from the surveys. These cultures will be used to determine VCG's present in NSW cotton crops. Particularly important given a new strain VCG2A has been recorded in a NSW cotton crop. We will be working in collaboration with QDAFF by providing our reference cultures for VCG's determination.



1.



2.



3.



4.

1. AERIAL view of NSW cotton fields with severe Verticillium wilt.

2. GROUND view of NSW cotton field with severe Verticillium wilt.

3. VIEW of plants in NSW cotton field with severe Verticillium wilt.

4. A COTTON leaf displaying characteristic yellow mottle.