

DISEASES OF COTTON XI

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Questions, issues being addressed?

Research undertaken by NSW DPI Pathology in the project Diseases of Cotton XI continues to ask questions with regard to pathogens causing diseases of cotton.

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Further Information

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Primary Industries

Key Questions	How these are being addressed
What are the primary diseases of cotton, including what is the incidence and severity?	NSW biannual cotton disease surveys 2013/2014 season represents 31st consecutive year of surveys
Are there any exotic cotton diseases in Australian cotton crops?	Surveillance of commercial cotton crops
Is Fusarium wilt within infected fields spreading and if so, how far?	Fusarium transects in commercial fields
Is there a link between high incidence of black root rot and high incidence of Verticillium wilt?	Data mining
What level of <i>Verticillium dahliae</i> (the pathogen that causes Verticillium wilt) inoculum is needed in soil to cause both external and internal symptoms?	Growth room pot experiment
What is the level of genetic diversity with <i>Verticillium dahliae</i> ?	Molecular studies Pathogenicity testing
What is the effect of different fertilisers (cow/chook manure/anhydrous ammonia/urea) on verticillium inoculum in the soil?	Field trial
Efficacy of existing and novel seed treatments?	Annual seed treatment trials in several locations throughout NSW
Is there high genetic diversity amongst <i>Thielaviopsis basicola</i> (the pathogen causing black root rot) isolated from different geographic locations?	Molecular studies Morphological growth rates (laboratory experiment) Pathogenicity assays (pot trials)
Does the planting of biofumigation crops offer an alternative management strategy for reducing incidence and severity of black root rot?	Long term Biofumigation field trail at ACRI
How does NSW DPI respond to industry issues as they arise?	Free and confidential diagnostic service PathWAY – communication tool linking pathologists, virologists and other industry experts
What if there was an exotic incursion of hypervirulent bacterial blight?	Contingency plan for bacterial blight being written Differential lines being tested

What impact will this have on the Australian cotton industry?

Data provided by the surveys continues to indicate the relative importance of each of the diseases present and the impact of cultural practices and the adoption of new varieties on disease distribution, incidence and severity. Surveillance also documents the absence of exotic diseases in NSW commercial cotton farms. Survey results have therefore been used to support and justify requests for research funding and have contributed to the development of Integrated Disease Management strategies. Answers to questions regarding pathogens will ultimately assist the effort being made to reduce the impacts of disease on the sustainability of cotton farms through adoption of new strategies.