

CRDC
Final Report
Distribution and epidemiology of geminiviruses - An industry impact assessment

During January to June 1999 tests were carried out to determine infectivity of the existing geminivirus in Australia in cotton. Challenge inoculation of cotton plants with the tomato leaf curl geminivirus was set up and the results have shown that the original virus strain from Darwin does not infect cotton. More recently, additional strains have been isolated from the Cape York Peninsula and these are being tested on a range of plants including cotton.

The main activity in 1999 concerned the emerging problem of cotton bunchy top disease. A number of affected cotton fields were visited and symptomatic plants were transferred to Adelaide for virus testing. Observation of plants under normal conditions for virus growth showed symptom recovery in the new growth. A range of virological tests were carried out but no pathogen could be detected. All these tests were done on plants that have recovered under the normal glasshouse conditions used.

The study did not support the involvement of a conventional virus but it was concluded that the initial findings were limited by the period of observation and the need to extend the study to a full cycle of growth to assess a possible influence of physiological and environmental conditions. These results were reported to the CRDC in July 1999 and were published in the Australian Cotton Grower, July-August issue, 1999.

The recurrence of bunchy top disease in the past growing season and more recent evidence suggesting transmission have instigated a new initiative to identify the causal agent. A joint research proposal for a comprehensive study has been developed in collaboration with Dr Lewis Wilson, ACRI, which is currently being reviewed by the CRDC.