

DAN92C Executive Summary

SUMMARY

INTRODUCTION

The cotton whitefly *Bemisia tabaci* is a serious pest of fibre, horticultural and ornamental crops world wide. When present in sufficient numbers, it can cause extensive damage through direct feeding, the production of large quantities of honeydew and as a vector of many viruses. A new biotype was first identified in the USA, known as the B-type or poinsettia strain Overseas, the B-type *B. tabaci* is a primary pest on cotton, other vegetable crops (curcubits, tomatoes, rock melons) and ornamentals. This strain is extremely virulent, insecticide resistant, adapts to temperate climates and has a host range of over 500 plants.

The B-type *B. tabaci* was detected, for the first time in Australia (by Dr Gunning), in October 1994 in both Darwin and Tamworth. During 1994/95, the Cotton Research and Development Corporation funded a survey to determine the current Australian distribution of B-type *B. tabaci* and its insecticide resistance status.

OBJECTIVES

1. To undertake a comprehensive survey of the Australian distribution of B. biotype *B. tabaci*.
2. To survey cotton for the presence of B, biotype *B. tabaci*
3. To develop and asses the usefulness of a field "squash test" to identify B -biotype *B. tabaci*.
4. To undertake preliminary bioassay studies to identify insecticide resistance status of this insect.

RESULTS AND DISCUSSION

B-biotype *Bemisia tabaci* is widely distributed in NSW and Queensland. While infestations are largely confined to plant nurseries, the whitefly is gradually spreading into the cotton producing areas of NSW and Queensland.

Preliminary insecticide bioassays by Dr Gunning have confirmed overseas experience, that B -type *B. tabaci* are resistant to most organophosphate, carbamate and pyrethroid insecticides (including the newer pyrethroids such as bifenthrin). As a consequence, this insect may be difficult to control. However, B- type populations appear to be susceptible to endosulfan, although resistance may easily develop.

DISCUSSION AND RECOMMENDATIONS

The spread of this whitefly is expected to result in it becoming a major cotton pest in Australia, due to insecticide resistance. Clearly, further whitefly resistance research is required to ensure that resistance is managed effectively and that cost effective control is available to minimise the danger that this insect poses to the cotton industry.