

FINREPOR DAN102C

Cotton *Research and Development Corporation*

FINAL REPORT

"Dr Ian Denholm - Travel"

DAN 102C

September 1995 to October 1995

Dr Robin Gunning, The Tamworth Centre for Crop Improvement (067-63 1128)



NSW Agriculture

SUMMARY

1. INTRODUCTION

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. In recent years, a novel biotype was identified in the USA known as the B-biotype or poinsettia strain. Now known to have spread round the world, the B-Type occurs widely in the Middle East, Europe, North and Central America. This biotype is distinguished by a characteristic esterase banding pattern, its ability to inflict physiological disorders on vegetables, adaptability to temperate climates and insecticide resistance. Overseas, the B-biotype has achieved primary pest status on cotton, other vegetable crops (curcubits, tomatoes, rock melons) and ornamentals. The B-Type is more virulent than other *B. tabaci* and has a much wider host range. Poinsettias have become the major host for B-types, and the immature stages of this insect have been transported between countries and continents on poinsettias.

B-Type *Bemisia tabaci* was detected in Australia by Robin Gunning in October 1994. Initially found in Darwin, NT and in Tamworth, NSW, the whitefly is now known to be widely distributed. NSW (Alstonville, Wollongbah, Moree, Tamworth, Coffs Harbour, Dubbo, Richmond, Blue Mountains, Sydney, Warren, Narromine, Coonabarabran), Queensland (Cairns, Ayr, Emerald Kingaroy Dalby, Toowoomba, Bileola, Brisbane), the Darwin and Katherine areas of NT. The whitefly was also found in the ACT and Devonport in Tasmania. At this stage, while infestations are largely confined to plant nurseries, B-biotype *B. tabaci* were found in May 1995 on a field pumpkin crop near Tamworth and a sunflower crop at Moree. More recently (November 1995) the whitefly was found on cotton at Emerald (at very low densities) and in the Macquarie Valley on cotton and weeds (December 1995).

2. OBJECTIVES

Reason for Travel :

Dr Denholm is an international authority on the management of resistant *Bemisia tabaci* on cotton.

1. Funds were requested to bring Dr Denholm to Australia to present a keynote address on whitefly management at a special cotton entomology symposium at the Australian Entomological Society's Scientific Conference, Tamworth 23-28 th September 1995.
2. Dr Denholm was also requested to address a CRDC/HRDC Workshop on Biotype B *Bemisia tabaci* in Australia, discussing the options for the management of resistant *B. tabaci* on cotton in Australia, held at the Airport Hilton, Sydney 10 October 1995.
3. To discuss progress in collaborative research on B-type *B. tabaci* and *Helicoverpa* resistance biochemistry between Dr Gunning and the Rothamsted Insecticide Resistance Group.

3. RESULTS AND DISCUSSION

B-type *B. tabaci* is a new insect pest in Australia and is one with which Australian researchers have little experience. Dr Denholm's very timely presentations, and his experience and advice have been very valuable to the Australian cotton industry.