

1714 A detector dog for *Helicoverpa* pupae

Mr. Greg Horrocks , Queensland Department of Primary Industries, Toowoomba, Australia
Dr. Allison Crook , Queensland Department of Primary Industries, Toowoomba, Australia
Dr. David Murray , Queensland Department of Primary Industries, Toowoomba, Australia
Mr. Richard LLOYD , Queensland Department of Primary Industries, Toowoomba, Australia
Mr. Bruce A. Pyke , Cotton Research and Development Corporation, Narrabri, Australia

Resistance management in *Helicoverpa armigera* is a high priority for both conventional insecticides and transgenic *Bt* technology (Bollgard®II). Over-wintering pupae are the most vulnerable stage in the life cycle of *H. armigera*, and management efforts have been directed at reducing survival of this stage through the use of 'pupae busting', or disturbance by cultivation to a depth of 10 cm. Pupae busting is mandatory for Bollgard®II crops, and recommended for conventional (non-Bt transgenic) crops. While there has been a high level of pupae busting compliance, it is associated with some disadvantages - cultivation loses soil moisture resulting in lost opportunity to double crop, alters soil structure under wet conditions and is hard on machinery under dry conditions. There is a need for improved pupae detection/sampling methods to assist researchers and to aid grower decisions. Following a successful feasibility study showing that dogs could be trained to locate pupae in fields, CRDC and Monsanto funded a study to calibrate the pupae detection dog against known field densities of pupae, and develop its capacity for field application.