

Towards a fully integrated pest management strategy for Australian macadamias

R. Huwer, C.D.A. Maddox, M. Hickey, and J. Bright

New South Wales Department of Primary Industries

ruth.huwer@dpi.nsw.gov.au

There are a number of pests impacting on the productivity of the macadamia industry in Australia, including flower and foliage pests (i.e. macadamia lace bug (*Ulonemia* spp.) and mites and thrips species), kernel and post-harvest pests (such as fruitspotting bugs (*Amblypelta* spp.) and *Sigastus* weevil (*Sigastus* sp.)) and pests attacking the branches and trunk (i.e. bark beetles and trunk borers). Pest management strategies in the past have been developed for single pest species. These strategies particularly for fruitspotting bugs covered a number of approaches, including monitoring tools, chemical and biological control, cultural control and a pilot study of an area wide management approach. However, no truly integrated strategy has been developed to date that has taken more than 1 or 2 of the key-pests into account.

Horticulture Innovation tendered a large IPM programme for the Australian macadamia industry. The overall aim of the program is to develop a pest resilient farming system for the macadamia industry. Specifically, it aims to:

- Identify and address gaps in research and extension for pest management for macadamias in Australia
- Continue research as required on current key pests
- Develop a truly integrated and sustainable management approach
- Maintain and improve industry resources in pest diagnostics and IPM tools
- Maintain and build capability to respond and deal with new and emerging pests
- Build strong links to other macadamia industry programs

The larger IPM program brings together a team of highly experienced researchers with considerable experience, specifically in pest management in macadamias and in IPM extension and adoption. As part of the larger program the NSW DPI Team will take on leadership of major components of the research. The research is taking a regional approach, customising strategies for the 4 major growing regions in Australia and their differences in pest complexes.

The research will include following aspects:

- Laboratory and field ecology and biology studies of pests, including life-cycle studies and field monitoring of selected pests and beneficials
- Diagnostic and response to new emerging pests
- Development and testing of cultural control methods for selected pests
- Laboratory screening of IPM compatible chemicals
- Testing of IPM strategies in the field and monitoring of selected pests and beneficials, in four different regions and in collaboration with professional pest consultants
- Co-lead industry adoption

This 5 year research project started in January 2017. Initial monitoring and laboratory and field trials have commenced. Initial finding will be reported on.