

Lure and kill for management of medfly in stone and pome fruit

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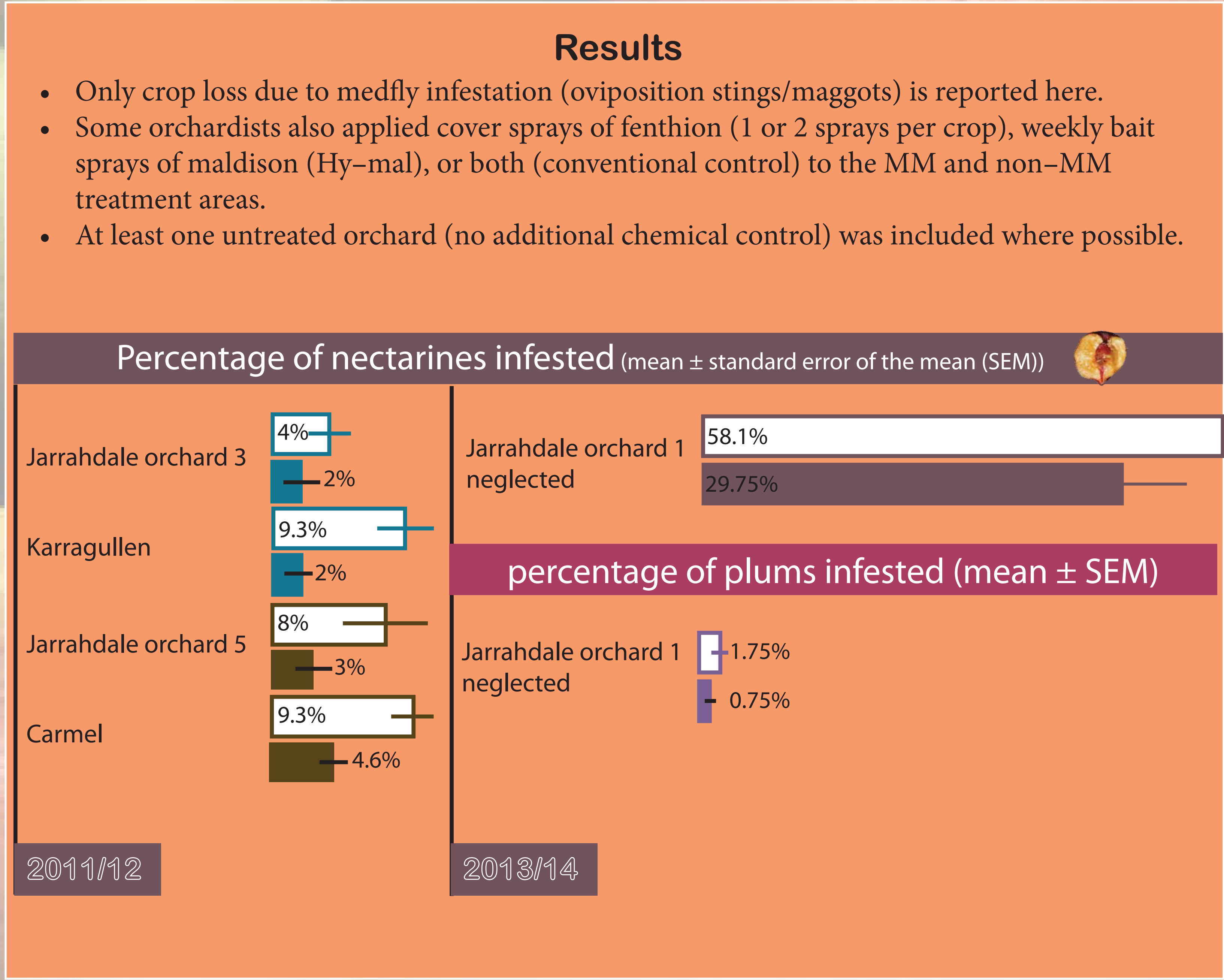


Magnet™MED decreased crop losses of apples and nectarines by 40-500% compared to the untreated control on some orchards.
Though often more effective than conventional control methods , it cannot be used alone.
Growers will need to apply protein bait and/or cover sprays to reduce losses to economically acceptable levels.
Funding is being sought to determine if the sterile insect technique can be combined with mass trapping or lure and kill, particularly in urban and peri-urban areas as part of area-wide management and eradication protocols.



Background

- Female Mediterranean fruit fly (*Ceratitis capitata*) require dietary protein to develop ovaries and mature their eggs, and males require protein to mature their testes.
- The need for, and attraction of medfly to protein odours is being exploited in mass trapping and lure and kill.
- Magnet™MED (MM) lure and kill is a device incorporating synthetic food lures (ammonium acetate, trimethyl amine, putrescine) in a laminated envelope coated with insecticide.
- Whilst MM is effective under European conditions, its performance under the harsher Australian climate was not known.
- To determine if MM could be used as a control on its own, or is more effective when combined with conventional control methods such as cover spraying and foliage baiting in pome and stonefruit.



Acnowledgments
We thank Paul Murphy, Amanda Page, Bill Woods, Amandip Viridi, Alven Soopaya, and Kevin Lacey from DAFWA, and Steven David from Organic Farming Systems, for technical assistance. Charlie and Matt Borg, Frank Ciminata, Gordon Day, Loui Gianetti, Anthony Fullam, Ray Leotta, David Simmons, Kim Tucker and John Vetta all kindly provided access to their orchards for trial work. Funding for the project was provided by DAFWA, Horticulture Australia Ltd, Fruitwest and Summerfruit Australia.

Methods

- Trials were conducted in the Perth Hills Western Australia from 2011–2014.
- The climate is warm temperate, with hot, dry summers (December to February) and cool, wet winters (June to August). Mean monthly daily air temperatures range from 16.2–18.2°C (min) to 22.3–36.0°C (max) in summer, and 8.5–13.6°C (min) to 19.3–25.7°C (max) in winter. Heat waves with consecutive days >35°C are common in summer.
- Commercial orchards consisted of blocks of different cultivars of apples, pears, peaches, plums, and nectarines. Orchards were divided into control and experimental areas of approximately equal size.
- MM devices were installed at the rate of 80 devices/ha, 1–3 months prior to harvest.
- Two traps/ha (one pair of male and female selective traps) were used to monitor medfly abundance; fruits were examined for fruit fly damage (larvae, oviposition) at harvest.

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Example trial layout within an orchard. Squares and circles indicate monitoring trap locations.

