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The establishment and spread of the latest biocontrol agents released against *Lantana camara* in Australia

Dianne B.J. Taylor¹, Natasha Riding¹, Annerose Chamberlain¹, Andrew Clark² and Michael D. Day^{1,3}

¹ Alan Fletcher Research Station, Biosecurity Queensland, Department of Primary Industries and Fisheries, PO Box 36, Sherwood, Queensland 4075, Australia

² Landcentre, Biosecurity Queensland, Department of Primary Industries and Fisheries, Locked Bag 40, Coorparoo DC, Queensland 4151, Australia

³ CRC for Australian Weed Management

Email: dianne.taylor@dpi.qld.gov.au

Summary *Lantana camara* L. has been the subject of biocontrol in Australia for almost a century. Thirty one agents have now been released, of which 17 have established and five are causing seasonal damage. Field surveys of three biocontrol agents recently introduced to control *L. camara* have been conducted throughout eastern Australia. Results are reported here. The status of the newly introduced agent, *Ophiomyia camararum* is also reported.

The rust *Prospodium tuberculatum* (Speg.) Arthur has been released since 2001. It is present at 50 sites in Queensland and 30 sites in New South Wales (NSW). Drought conditions have seriously affected its establishment and spread. Recent surveys on the Atherton Tableland in north Queensland suggest that the rust has spread up to 15 km from some release points. The rust was generally at low incidence (1–3 pustules, 10% of leaves), although at a few sites this was greater and the rust was causing some leaf drop.

Over 220,000 adults of the mirid *Falconia intermedia* (Distant) were released at 110 sites (500–5000 adults per site) throughout Queensland and NSW over a four-year period from 2000. However it has only established at two sites: Millaa Millaa on the Atherton Tableland and Julatten in north Queensland. The population at Millaa Millaa has built up such that the insect is causing severe chlorosis of leaves. Reasons for the agent's poor establishment in the field are not known but may include competition from other biocontrol insects, incompatible sites climatically or drought induced plants.

Aconophora compressa Walker was first released in 1995 and has been released throughout coastal and subcoastal eastern Australia. The insect has established in three main areas. From Brisbane, it has spread north to Noosa, west to Toowoomba and south to Yamba on the NSW north coast. Around Mt Fox, near Ingham in north Queensland, *A. compressa* has spread up to 15 km, while on the Atherton Tableland it has spread up to 20 km. Insect populations build up over winter,

causing defoliation and stem dieback. However, the high temperatures often observed during summer can decimate populations (Dhileepan *et al.* 2005), allowing *L. camara* to recover.

The herringbone leaf-mining fly *Ophiomyia camararum* Spencer, was first released in October 2007 and releases are continuing. Larvae feed on the mesophyll within the leaves, causing distinctive herringbone patterned mines. Mined leaves can prematurely abscise, reducing reproductive output and stunting growth. Initial damage in South Africa has been impressive in sheltered sites (Simelane and Phenye 2005). The agent should establish in high humidity areas along the east coast from northern NSW to Cairns, favouring sheltered areas.

It is hoped that these agents will enhance the degree of control observed over *L. camara*. Efforts are underway to quantify the damage caused by the agents and to assist in their redistribution.

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REFERENCES

- Dhileepan, K., Trevino, M. and Raghu, S. (2005). Effect of temperature on the survival of *Aconophora compressa* Walker (Hemiptera: Membracidae): implications for weed biocontrol. *Australian Journal of Entomology* 44, 457-62.
- Simelane, D.O. and Phenye, M.S. (2005). Suppression of growth and reproductive capacity of the weed *Lantana camara* (Verbenaceae) by *Ophiomyia camararum* (Diptera: Agromyzidae) and *Teleonemia scrupulosa* (Heteroptera: Tingidae). *Biocontrol Science and Technology* 15, 153-63.