Association and synchrony of *Smicronyx guineanus* and *S. umbrinus* (Coleoptera: Curculionidae) and the parasitic weed *Striga hermonthica* (Scrophulariaceae)

DOULAYE TRAORÉ[1], CHARLES VINCENT[2] and ROBIN K. STEWART[3]

1 *Institute d'Études et de Recherches Agricoles, Station de Farako-bâ Programme Coton, BP 208 Bobo-Dioulasso, Burkina Faso*

2 *Centre de Recherche et de Développement en Horticulture, Agriculture et Agro-Alimentaire Canada, 430 Boul. Gouin, Saint-Jean-sur-Richelieu, Québec, J3B 3E6, Canada*

3 *Department of Natural Resource Sciences, Macdonald Campus of McGill University, Ste-Anne-de-Bellevue, Québec, H9X 3V9, Canada*

Adult populations of *Smicronyx guineanus* Voss and *S. umbrinus* Hustache were sampled to assess synchrony between the weevils and their host, *Striga hermonthica* (Del.) Benth., in fields of sorghum and pearl millet in Burkina Faso. Chi-square tests for independence of the populations of the two weevil species showed close synchrony of the adults with the presence of witchweed. Larval galls were found at each of 50 field-sites and the proportion of flowers galled ranged from 1-84%. A search for alternate hosts showed that the weevils were not associated with other plant species.

Field establishment - how long does it take?

M. VITELLI[1], P. JAMES[2], J. MAROHASY[3], R.E. McFADYEN[3], M. TREVINO[3] and M. HANNAN-JONES[3]

1 *Tropical Weeds Research Centre, PO Box 187, Charters Towers, Qld 4820, Australia*

2 *Northern Region, PO Box 5318 MC, Townsville, Qld 4810, Australia*

3 *Alan Fletcher Research Station, PO Box 36, Sherwood, Qld 4075, Australia*

A leaf-feeding pyralid, *Euclasta whalleyi*, suddenly reached outbreak densities in 1995, four years after the insect biological control project for rubber vine, *Cryptostegia grandiflora* in Australia was considered a failure. Three other insect species previously tested were not host-specific and the pyralid moth showed no signs of field establishment by 1991. The Madagascan moth, *E. whalleyi*, released in Australia from 1988 to 1991, is now widespread over 70000 km^2 in north east Australia. Localized, outbreak densities are causing total defoliation of the rampant woody vine, *C. grandiflora*, within this area and throughout a number of satellite outbreaks. Larval feeding causes premature leaf-drop and shoot dieback. Young larvae also feed on flower petals and ovules. At several locations, populations of *E. whalleyi* exist where plants are infested with the rust, *Maravalia cryptostegiae*, a more recently introduced biological control agent which is spreading rapidly throughout the northern range of rubber vine. The first signs of field establishment of *E. whalleyi*, four years after the last release of this biological control agent raises four questions: (i) what is the threshold of detectable feeding damage when conducting field evaluations of an agent; (ii) what environmental and host plant factors have contributed to population outbreaks of the agent; (iii) is this an example of post-introduction adaptation to climate, increased genetic variability, or a widely dispersed insect following an exponential growth-curve after four to seven years at undetectable population levels; and (iv) how long should field establishment be monitored before deciding on success or failure?