

Surveys of *Solanum* spp. in South Africa and their Application in the Biological Control of *Solanum* Weeds

T. Olckers¹ and P.E. Hulley²

¹ *Plant Protection Research Institute, PO Box 330, Uitenhage, South Africa*

² *Department of Zoology and Entomology, Rhodes University, Grahamstown, 6140, South Africa*

Biological control of the exotic *Solanum elaeagnifolium* and *S. mauritanum* in South Africa has been constrained by the presence of indigenous and cultivated *Solanum* species. Faunistic surveys were conducted to examine the relationships between insects and exotic, indigenous and cultivated *Solanum* plants in South Africa. Although there is a moderately rich herbivore fauna on indigenous *Solanum* species, the exotic species have depauperate faunas, comprising mainly polyphagous species. Indigenous *Solanum* insects are not preadapted to utilize exotic species and cannot thus complement specialist agents imported for the biological control of these weeds. The ability of most potential agents to attack the cultivated eggplant (*Solanum melongena*) in cage tests has been the major problem in the *Solanum* biological control programme. Indigenous *Solanum* herbivores show similar patterns in that many attacked eggplant, both in the field and under cage conditions, although none are listed as pests. Eggplant cultivations treated with pesticides reflected few herbivores and little damage relative to neglected cultivations where the opposite was true. The non-pest status of potential candidates on eggplant grown on the American continent may also relate to pesticide treatments. These findings suggest that potential agents are no more of a risk to eggplant than indigenous *Solanum* herbivores and that biological control may be applied to *Solanum* weeds.
