

Native *Rumex* spp. (Polygonaceae) and their utilisation by the dock moth *Pyropteron dorylifformis* (Ochsenheimer) (Lepidoptera: Sesiidae) in Australia

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Summary Many species of *Rumex* are serious weeds in temperate regions around the world, including high rainfall regions and irrigated pastures of southern Australia. A biological control program was initiated against *R. conglomeratus* Murray, *R. crispus* L., *R. obtusifolius* L., and *R. pulcher* L. in Australia in 1982 and in 1989 *Pyropteron dorylifformis* (Ochsenheimer), was released.

In addition to the exotic *Rumex* species in Australia, there are also seven native *Rumex* species. Two (*R. brownii* Campd. and *R. dumosus* A.Cunn. ex Meisn.) were included in the host testing of *P. dorylifformis*; both were found to be potential hosts. Several other native *Rumex* species were omitted from testing because they were deemed to be biologically and/or ecologically incompatible with the agent (Scott 1990). The aim of the study reported here was to examine the use of native *Rumex* spp. by *P. dorylifformis* in Australia. Field searches were conducted in south-eastern and south-western Australia to determine the host range of *P. dorylifformis* in the field and hence assess the pre-release predictions of Scott and Sagliocco (1991). To provide additional information regarding host suitability, larval development trials were conducted. These were continued until larvae had completed development, unlike the pre-release trials in which only the early instar development was assessed (Scott and Sagliocco 1991).

Four species of native *Rumex* were found at sites where *P. dorylifformis* was also present. Damage consistent with *P. dorylifformis* attack was found in *R. brownii* and *R. dumosus* (as predicted), though no larvae or pupal cases were recovered. Two native species originally presumed to be climatically incompatible with *P. dorylifformis* (*R. crystallinus* Lange and *R. tenax* Rech.f.) were also found at sites where the agent had established. No definitive evidence of *P. dorylifformis* feeding was found in the roots of either species. However, during larval development trials the single *R. tenax* root tested supported complete larval development, suggesting that the species could

act as a host in the field. The development trials also included a fifth native species, *R. stenoglottis* Rech. f. which was not found at sites with *P. dorylifformis*. Neither *R. stenoglottis* nor *R. crystallinus* contained evidence of *P. dorylifformis* feeding. The rare native *Rumex drummondii* Meisn. could not be located, though it is believed to occur in an area where numerous releases of *P. dorylifformis* have been made (Scott and Yeoh 1995).

Data collected during this study supports the pre-release prediction that the native species *R. dumosus* and *R. brownii* may be attacked by *P. dorylifformis* in the field, though stronger evidence is required for this to be stated convincingly. *Rumex tenax* has now been identified as a species potentially at risk of non-target attack. The potential attack of *R. tenax* and *R. drummondii* in particular requires further study.

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