DETERMINATION OF WHEN *WISEANA COPULARIS* LARVAE BEGIN FEEDING ON PERENNIAL RYEGRASS AND WHITE CLOVER

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Wiseana copularis eggs were hatched on moist filter paper in Petri dishes at 20°C. Larvae were used for the experiment immediately following hatching or reared in pine bark with a carrot/white clover-based diet until required. Thirty larvae in each of the first, second and third instars were placed individually in 65 mm Petri-dishes containing bark with either a *Trifolium repens* leaflet or 30 mm of *Lolium perenne* leaf laid on the bark surface. Another 30 larvae of each instar were placed in Petri-dish bases with bark and either an upright stem and leaf of *T. repens* or a tiller of *L. perenne* and covered with inverted 60 ml vented containers. After 3 days, feeding and larval survival was recorded. Twenty-two first instar larvae and all second and third instar larvae fed on clover leaflets. Eleven first instar larvae, seven second and 23 third instar larvae fed on clover stems. Ryegrass leaf was eaten by 13 first, 29 second and 30 third instar larvae, with feeding on tillers occurring 8, 17 and 20 times respectively. Where feeding occurred live larvae were recovered; where feeding was not recorded the larvae were either dead or not found.

THE FIELD EVALUATION OF *PHOMA EXIGUA* AS A BIOCONTROL AGAINST CALIFORNIAN THISTLE (*CIRSIIUM ARVENSE*)

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Field trials undertaken over three seasons (2000-2003) showed that *Phoma exigua* was a highly variable pathogen when inoculated as a conidial spray application onto Californian thistle plants. While infection was present at all field sites, disease levels and disease spread ranged from very low to moderately high both within and between trial site properties. The fungus was successfully re-isolated from host leaf and stem tissues but was absent from plant root samples. Disease levels at some sites showed the fungus was at times capable of inhibiting thistle growth and seeding. To improve field efficacy, an earlier spray application and a wounding treatment when plant rosettes first emerged in the pasture swards was trialled over the 2002-2003 growing season. Implementation of these methods improved both infection and disease spread at some sites, but significant variation in field efficacy and fungal pathogenicity, both within and between sites, was still observed. Disease development was often slow so vigorous growth of some inoculated plants meant the host was resistant or simply outgrew the initial fungal infection. From these results the potential of *Phoma exigua* in biocontrol is regarded as being low unless it is integrated with other weed control and land management options.