Biological Control of Gorse (*Ulex europaeus*) in New Zealand

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Gorse is a thorny, leguminous shrub which has been one of the most important weeds of agriculture and the natural environment in New Zealand for over 90 yrs (Hill and Sandrey 1986). The seed-feeding weevil *Apion ulicus* was released in New Zealand in 1931 for the biological control of gorse and is very common. The impact of this insect is limited by lack of total synchrony in most areas between weevil oviposition and production of pods (Hill et al. 1991). No other agents were introduced at that time. Potential agents available in Europe were defined by IIEC in the 1960s, but no further introductions were considered until the programme resumed in 1978. Ten agents have since been evaluated for possible release. Four species have been released since 1989. *Tetranychus liniearius* (Acari: Tetranychidae) has established widely in New Zealand but at only 22% of sites north of latitude 39°S compared with 87% south of that latitude (Hill et al. 1991). This suggests that mites do not establish well in warmer, wetter areas. The reasons for this are not clear. Strains of mites from warm, wet areas of Spain and Portugal have been imported and may be released in 1992. *Sericothrips staphylinus* (Thysanoptera: Thripidae) has been released widely throughout New Zealand since November 1990. There have been limited releases of *Cycla succedana* (Lepidoptera: Tortricidae) and *Agonopteryx ulicetella* (Lepidoptera: Oecophoridae). *Dictyophora stichnocera* (Hemiptera: Tingidae) is not considered a suitable agent at present because of possible incidental attack on 2 beneficial plant species. Research into the suitability of 5 further agents continues. These are: *Scythis grandipennis*, *S. gallicella*, *Pemphila genistella* (Coleoptera: Scyphridae), *Apion scutellare* and *Sitona striatellus* (Coleoptera: Curculionidae). Three natural enemies of gorse which are resident in New Zealand may prove effective as control agents elsewhere in the world. *Anisoplaeca pityoptera* (Lepidoptera: Gelechiidae) is a native moth which mines the stems of native legume shrubs as well as gorse (Holder 1992) but has a limited host range (Hoddle et al. 1991). *Ditylenchus dipsaci* (Nematoda) and *Aceria genistae* (Acari: Eriophyidae) are self-introduced species which merit further investigation.

References


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