MULTI-TARGETING FOR BIOLOGICAL CONTROL OF 'SLEEPER WEEDS'

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'Sleeper weeds' are weeds at the early stage of invasion – exotic species that have become naturalised and are highly likely to turn invasive in due course. New Zealand has more naturalised exotic vascular plant species than natives, many of which are considered sleeper weeds. Biological control is more likely to succeed on weeds that have not yet fulfilled their invasive potential, hence its significance in management of sleeper weeds. Multi-targeting is suggested here as a new approach for safe and effective management of multiple, closely related invasive and sleeper weed species, from groups not represented in the native flora, using agents with a relatively wide host range. While specifically targeting an invasive species in the group, such agents could prevent closely related sleeper weeds from becoming a problem in the first place. Thistles were used as a case study, and strong support was found for the multi-targeting approach. Thus, three 'non-target', less preferred thistle species were attacked and damaged by the biocontrol agent *Rhinocyllus conicus* more in the presence of its preferred host, *Carduus nutans* (nodding thistle), than in its absence, both in a field experiment and in a field survey.

ASSESSING THE POTENTIAL FOR BIOLOGICAL CONTROL OF *BUDDLEJA DAVIDII* WITH THE FUNGUS *CHONDROSTEREUM PURPUREUM*

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Buddleja davidii is a perennial woody shrub that is highly invasive in many parts of the world, including New Zealand. This study was conducted to assess the potential for inundative biological control of this weed using *Chondrostereum purpureum*, a wound invasive basidiomycete. The fungus has been registered for woody weed control in Canada and the Netherlands and is present throughout New Zealand. Mature *B. davidii* shrubs planted at the Scion campus, Rotorua, were cut 30 cm from the ground and the cut surface of the stems was immediately inoculated with *C. purpureum*-colonised malt extract agar (MEA) and sealed with Parafilm. There were four replicate shrubs for each of three isolates and the control (inoculation with sterile MEA). One year following inoculation, no fruiting bodies of *C. purpureum* have been observed on the treated *B. davidii*. Although the inoculated stems appear dead, most replicates have extensive epicormic shoot development and are forming coppices.