

Wandering trad biological control

Fungal biocontrol of a creeping invader for sustainable recovery of impacted native vegetation

Invasion by wandering trad

Wandering trad (*Tradescantia fluminensis*) is a herbaceous groundcover native to South America that has become a significant environmental weed of temperate regions of Australia, with hotspots of invasion in moist forests of eastern NSW, south east Queensland and the Dandenong Ranges region of Victoria. Invasion is associated with significant reductions in native vegetation diversity and degraded rainforest ecosystems, especially in sensitive riparian areas.



Flower of wandering trad (*Tradescantia fluminensis*).

Leaf smut fungus as a biocontrol

The recent release of a fungal pathogen (*Kordyana brasiliensis*) from Brazil as a biological control (biocontrol) agent for wandering trad in New Zealand presents a promising prospect for implementing a similar management solution in Australia. A fungal biocontrol solution would be especially beneficial for ecologically sensitive riparian areas where the use of herbicides to control wandering trad is unviable. Rigorous testing of the fungus in quarantine has shown it is highly specific to wandering trad and poses no risks for native vegetation. Our aim is that native vegetation will benefit from a reduction in the growth and competitive vigour of wandering trad in response to leaf attack by the fungal pathogen, thereby promoting native biodiversity.

Release of the smut fungus into the environment

CSIRO has been involved in research on wandering trad biocontrol since 2014, with initial financial support from CSIRO and the Australian Government's National Environmental Science Programme administered by the Department of the Environment and Energy. CSIRO plans to first release the fungus into the environment in May-June 2019 at a series of monitoring plots across the Dandenong Ranges in order to evaluate the successful establishment and spread of the fungus. During June-August 2019, CSIRO will run a series of workshops in partnership with local community members to deploy the fungus across the landscape to control wandering trad at a broad scale.

Current research on wandering trad is part of a broader project seeking biocontrol solutions for sustainable management of environmental weeds, which also includes Cape ivy (*Delairea odorata*) and angled onion (*Allium triquetrum*), co-funded by CSIRO and the Commonwealth Department of Industry, Innovation and Science and supported by the Community Weeds Alliance of the Dandenong.

How to get involved

If you would like further information about the fungal biocontrol program for wandering trad or to participate in the release workshops, please contact Dr Ben Gooden from the CSIRO (Ben.Gooden@csiro.au; +61262183896).

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FOR FURTHER INFORMATION

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Infestation of wandering trad in the Dandenong Ranges, Victoria.



A



B



C



D

The leaf smut fungus, *Kordyana brasiliensis*, on wandering trad.

(A) Disease symptoms on the upper surface of the leaf and, (B) under surface of leaf, 14 days after inoculation*.

(C) and (D): The white spots continue to spread and lead to leaf death.

*These symptoms occurred under optimal conditions and time for disease symptoms may vary under field conditions.