



Fig. 1. *Kordyana brasiliensis* (a) basidia emerging from stomata, (b) pale leaf lesions on abaxial leaf surface, (c) extensive infection on wandering trad stems in the field, and (d) yellowish leaf lesions on the adaxial leaf surface.

Disease: Tradescantia yellow spot fungus; wandering trad leaf smut

Pathogen: *Kordyana brasiliensis*

Classification: K: Fungi P: Basidiomycota C: Exobasidiomycetes O: Exobasidiales
F: Brachybasidiaceae

Kordyana brasiliensis is a biotrophic fungal pathogen that infects the leaves of wandering trad (*Tradescantia fluminensis*). Wandering trad is a significant environmental weed invading moist forests and riparian ecosystems in south-east Queensland (QLD), New South Wales (NSW) and Victoria. *Kordyana brasiliensis* is host-specific to wandering trad and was deliberately released in New Zealand in 2018 and Australia in 2019 as a classical biocontrol agent for this weed.

Biology and Ecology:

Kordyana brasiliensis produces two spore types: basidiospores and conidia. Basidiospores land on abaxial leaf surface, germinate, and penetrate via stomata. Leaf lesions initially appear on the adaxial leaf surface as diffuse chlorotic spots. As disease progresses, pale lesions appear on the abaxial leaf surface. Lesions sporulate under high humidity, appearing 'fluffy' as basidia producing basidiospores emerge through the stomata. Leaf lesions continue to expand and become necrotic (Macedo et al., 2016; Morin et al., 2022). Germinated basidiospores can also form single celled conidia which can be grown on artificial medium and infect wandering trad plants (Zeil-Rolfe et al., 2024; unpublished).

Distribution:

Kordyana brasiliensis is native to South America (Macedo et al., 2016) and has been deliberately released in New Zealand and Australia (Manaaki Whenua Landcare Research 2020; Morin et al., 2022). In Australia, mass-releases of *K. brasiliensis* between 2019-2023 have resulted in widespread establishment and the fungus is now observed along the east coast of NSW, in the

Dandenong ranges in Victoria, with a few isolated observations in south-east QLD.

Host Range:

Comprehensive host-specificity testing conducted prior to Australian and New Zealand releases of the fungus identified that *K. brasiliensis* is highly host specific. The fungus can only complete its life cycle on wandering trad and was deemed safe for release (Fowler et al., 2013; Morin et al., 2022).

Impact:

In Australia, the impacts of *K. brasiliensis* infection was monitored at 14 release sites distributed across a climatic gradient in NSW. Impacts of the fungus varied significantly across the four climatic regions. In warmer and wetter climates *K. brasiliensis* infection resulted in a significant reduction (average ~83-90 %) in wandering trad abundance 2.5 years following release. In cooler and drier climates wandering trad abundance never significantly decreased below pre-release conditions (CSIRO, 2023). Native species richness was also observed to increase at sites where wandering trad abundance had declined significantly over time.

Further Reading: Macedo et al. (2016) Australasian Plant Pathology **45**: 45-56; Fowler et al. (2013) Biological Control **64**: 323-329; Morin et al. (2022) Biological Control **172**: 104978; CSIRO (2023) <https://research.csiro.au/wandering-trad/>; Manaaki Whenua Landcare Research (2020) Weed Biocontrol: what's New? **91**: 6; Zeil-Rolfe et al. (2024) Mycological Progress **23**: 41.

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