

Isolating fungal pathogens from a dynamic disease outbreak in a native plant population to establish plant-pathogen bioassays for the ecological model plant *Nicotiana attenuata*.

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Projects

Mutualistic microbial associates of *Nicotiana attenuata*
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Microbial interactions relevant for the fitness of *Nicotiana attenuata* in the native environment
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Abstract

The wild tobacco species *Nicotiana attenuata* has been intensively used as a model plant to study its interaction with insect herbivores and pollinators in nature, however very little is known about its native pathogen community. We describe a fungal disease outbreak in a native *N. attenuata* population comprising 873 plants growing in an area of about 1500 m². The population was divided into 14 subpopulations and disease symptom development in the subpopulations was monitored for 16 days, revealing a waxing and waning of visible disease symptoms with some diseased plants recovering fully. Native fungal *N. attenuata* pathogens were isolated from diseased plants, characterized genetically, chemotaxonomically and morphologically, revealing several isolates of the ascomycete genera *Fusarium* and *Alternaria*, that differed in the type and strength of the disease symptoms they caused in bioassays on either detached leaves or intact soil-grown plants. These isolates and the bioassays will empower the study of *N. attenuata*-pathogen interactions in a realistic ecological context.

Identifier

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