Foreign exploration of potential biological control agents for albizia, *Falcataria moluccana*

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Introduction

The island of Hawaii is negatively impacted by an invasive tree native to Indonesia, albizia *Falcataria moluccana*, which destroys native landscapes and threatens Hawaii businesses and homes with many millions of dollars in damage. We have completed exploratory surveys in Indonesia searching for specialist natural enemies of this invasive tree that will eventually undergo extensive host specificity and impact testing prior to release for biological control in Hawaii.

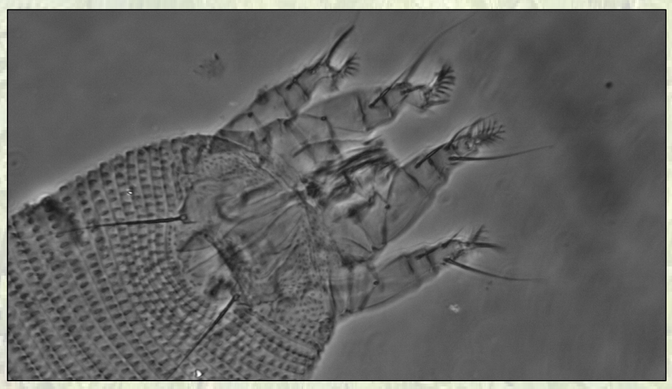
Methods

Multiple exploratory surveys were conducted in eastern Indonesia, where genetic data indicates the native range of Hawaiian albizia. The herbivorous pests were analyzed for their potential as biological control agents, and preliminarily assessed both for host-specificity and potential impact. We also investigated possible rearing methods of potential agents, and began the process of rearing albizia in Hawaii.

Results

We have narrowed our focus to two potential biological control agents and begun the process of identification. Air layering albizia is a potential way to accelerate available plant material for rearing.

Solobrachis sp
(Coleoptera: Curculionidae)



Adenocolus sp
(Trombidiformes: Eriophyidae)

Creating habitat inside stems for weevils

Airlayered albizia in Hawaii

Discussion

The weevil impacts albizia by boring tunnels inside the stems of albizia trees. The mite forms galls on the leaves, sometimes quite heavily. The life histories of the weevil and eriophyid mite and their association with albizia at widespread sites suggest that they are likely to be narrowly host-specific. The mite is likely of the genus Adenocolus, and it is likely that we have found a new species.

Rearing the weevil will involve the use of many stems from albizia trees and presents other logistical challenges that we have begun to address. Air layering albizia branches seems possible, but this method needs to be improved upon for mass rearing of both agents. Rearing the mite will require the use of an appropriate quarantine facility. Both agents are in the beginning stages of a biological control program. The next step is to conduct host-specificity and impact testing.

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