

## **Biology and Fundamental Host Range of the Stem Boring Weevil *Apocnemidophorus pipitzi* (Coleoptera: Curculionidae), a Candidate Biological Control Agent for Brazilian Peppertree**

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### **Abstract**

Brazilian peppertree, *Schinus terebinthifolius* Raddi (Anacardiaceae), was introduced into Florida, USA, from South America as an ornamental in the 1840s. It eventually escaped cultivation and has become a serious threat to the state's biodiversity, especially over large areas of the Everglades. In the 1980s, this invasive weed was targeted for classical biological control because of the extent of the infestation and the absence of native congeners in the continental USA. In March 2006, a survey for new natural enemies of Brazilian peppertree was conducted in southeastern Paraguay. A stem boring weevil identified as *Apocnemidophorus pipitzi* (Faust) was collected from the plant at several locations. The insect also has been reported from Argentina, Brazil and Uruguay. Adults are defoliators and feed mainly on the upper surface of subterminal leaflets, where they produce a characteristic notching pattern. Weevils were transported under permit to the Florida Biological Control Laboratory in Gainesville, FL. A laboratory colony of *A. pipitzi* was established in April 2007 by caging the adults on cut branches of Brazilian peppertree supplemented with leaf bouquets. This insect is the first stem borer of Brazilian peppertree successfully reared under laboratory conditions. To date, over nine generations of the weevil have been produced in the laboratory, with over 10,000 adults emerging in the fifth generation. Females deposit eggs singly inside the stems and larvae feed under the bark where they damage the vascular cambium. There are five instars, pupation also occurs inside the stem, and a new generation of adults emerges in 3-4 months. Host specificity tests were conducted with 77 plant species in 39 families and 7 orders. The results showed that *A. pipitzi* can reproduce only on Brazilian peppertree and the congeneric Hardee peppertree, *Schinus polygamus* (Cav.) Cabrera, which is invasive in California. The results of laboratory host range tests indicate that *A. pipitzi* is a *Schinus* specialist. A petition to release this insect in Florida for classical biological control of Brazilian peppertree was submitted to the federal interagency Technical Advisory Group for Biological Control Agents of Weeds.