

Title: Investigation of other potential insect vectors of Thousand Cankers Disease in Indiana and Missouri

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Cooperators: Matt Ginzel (Purdue University), Jerry VanSambeek (US Forest Service), Simeon Wright and Robert Lawrence (US Forest Service), Phil Marshall (Indiana Dept. of Natural Resources), Harlan Palm (University of Missouri), Andrea Gargas (Symbiology Inc.) and Dan Lindner (NRS, USDA)

Results of past research

- Identified 18 bark and ambrosia beetle species emerging from Indiana and Missouri black walnut [Co-Investigator: Juzwik, numerous cooperators]
- Examined bark and ambrosia beetle distribution in Indiana and Missouri [Co-Investigator: Juzwik, numerous cooperators]
- Investigated whether tree stems or canopy pieces were most attractive to each bark and ambrosia beetle species [Co-Investigator: Juzwik, numerous cooperators]
- Development of primers and dual-purpose serial-dilution plating method for fungal isolations [Co-Investigator: Juzwik, Banik]
- Isolated fungal types from 266 ambrosia beetles representing four species [Reed and English]. Fungal identification is pending [Co-Investigator: Juzwik]

Objectives of current research

- Document bark and ambrosia beetles attacking girdled black walnut trees and determine fungal associates of each abundant taxon in Indiana and Missouri [Ongoing 2011 study].
- Identification of Missouri insects attracted to girdled black walnut branches and characterization of cankers formed by their fungal associates [2012]

Future direction

- Determine capability of fungi isolated from bark and ambrosia beetles to cause cankers and discoloration in black walnut trees [from 2011, 2012 studies; Co-investigator: Juzwik]

Estimated duration

- Duration of research projects 12 - 18 months