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Termites, Trees and Hawaii's Forests

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In the College of Tropical Agriculture & Human Resources (CTAHR), we are concerned with protecting Hawaii's trees and wood products from termites and other wood boring insects. The Formosan subterranean termite is the most important insect pest of building materials in Hawaii, and can also seriously damage living trees. In studying the resistance of Hawaiian-grown trees to termite feeding, we have found eucalyptus and koa to be particularly susceptible.

We recently conducted a survey of over 400 arboriculturists, landscapers, pest control operators, and other interested parties to identify trees and plants attacked by termites. An earlier CTAHR survey had reported termites feeding on 48 plant species in Hawaii, and our survey added an additional 15 species to the list. Mango, Kauri pine and Australian pine were among the trees reported to be most frequently damaged by termites.

Unfortunately, the only methods now used to control termites in trees involve either outright destruction of the tree, or injecting insecticides into the termite galleries. These injections only control the insects in the immediate area of treatment. Since subterranean termites nest primarily in the soil and forage throughout very large areas, the problem is likely to resurge in untreated portions of the tree or in adjacent plants.

Insecticidal baits that will be carried back to the termite colony by the foragers are a promising area of our current research. In place of insecticides, we are also investigating specific insect pathogens for use in termite baits. Unlike broad-scale insecticide applications, use of insecticides or pathogens in properly-designed baits would avoid exposure to non-target organisms and adverse effects on Hawaii's unique insect fauna.

Because of the tremendous termite problem that exists in Hawaii, Asia, and the South Pacific, wood products from susceptible Hawaiian trees need protection. Supplementary wood preservative treatments can provide such protection. Both efficacy against wood destroying organisms and environmental compatibility are important criteria in developing preservatives for use in Hawaii, and our recently published results with boron and copper-based wood treatments provide examples of promising candidate materials.

UH research on termites, trees, and wood products is summarized every few months in the newsletter "Termite Times." If you are not already on our mailing list, please contact Carrie Tome in the Department of Entomology (808-956-2456, or fax 956-2428) and she would be glad to add you to it.