

Synthesis of Organic Pinene Pyrethrum Attractant for *D. frontalis*

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The southern pine beetle (SPB), *Dendroctonus frontalis*, is one of the most destructive organisms to pine forests in the southeastern United States. The preferred host of SPB's include that of loblolly pines, shortleaf pines, pond pines, and Virginia pines. SPB infestations can grow up to thousands of acres in size, can cause hundreds of millions of dollars in pine tree damage, and can wreak havoc on local wildlife. Georgia is especially susceptible to SPB infestations due to the mono-culture of pine trees and lack of knowledge on how to prevent SPB infestations. Therefore a solution needs to be implemented to control SPB's during times of severe epidemics. Current control methods include that of controlled burns, mass deforestation, and harmful insecticide use. The aim of this research is to inform the general population on how to best prevent SPB infestations and synthesize an organic and biodegradable pesticide attractant which specifically targets the SPB. The attractant will involve a mixture of alpha-Pinene as the attractant substance will be tested on controlled SPB populations, using a choice chamber, and plans for widespread implementation will be made if proven successful. While information about how to maintain healthy pine tree stands will be presented to the local community through information sessions, social, and other platforms.

Awards Won:

ASU Rob and Melani Walton Sustainability Solutions Service: Award of \$1,000