

EXPLORING THE POTENTIAL FOR USE OF RNA INTERFERENCE FOR EMERALD ASH BORER MANAGEMENT

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The emerald ash borer (EAB), *Agrilus planipennis*, is an exotic, invasive tree pest that has caused the death of hundreds of millions of urban and forested ash in North America. Adult EAB is responsible for only minor feeding damage, but larval feeding and tunneling beneath the bark disrupts water and nutrient transport, and tree death is rapid. All North American *Fraxinus* are susceptible, and EAB has more recently been reported on other Oleaceous hosts. Therefore, development of efficient and target-specific products for EAB management is essential. RNA interference (RNAi) technology is emerging as a next generation pest control method. Double-stranded RNA (dsRNA) molecules activate the RNAi pathway, which is a natural antiviral defense mechanism that disrupts normal protein synthesis. We've shown that RNAi can silence genes in EAB and cause rapid and extensive mortality. In order to move this technology to the deployment stage, its specificity to EAB must be demonstrated, and practical delivery methods must be developed. We are currently evaluating specificity by assessing potential non-target effects, and also evaluating methods of delivery.