

CONNECTICUT SCIENCE & ENGINEERING FAIR

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Awards Winners at the 2013 Connecticut Science & Engineering Fair (Student information as of April 2013)

Janine Kerr, Grade 10

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Biological Control of The Emerald Ash Borer Using Entomopathogenic Fungus

Connecticut Science & Engineering Fair Awards

- Pfizer Life Sciences Awards --- 5th Place- Life Sciences Senior High- trophy
- Urban School Challenge Awards with support from CASE --- Senior High Finalist - Medallion and acrylic award
- Environmental Sciences Awards with CACIWC --- 2nd Place HS- \$200, Trophy, CACIWC gifts, Trip to Compete GENIUS Olympiad, Oswego, NY
- Alexion Biotechnology Awards --- 5th Place- Biotechnology Senior High- trophy
- The Goodwin-Niering Center for the Environment --- \$100 for "Excellence in Environmental Conservation Studies"
- Banning Family Life Science Award --- For excellence in invasive species research, \$100 cash

Abstract

The Emerald Ash Borer (EAB) is an invasive species of beetle that kills ash trees by burrowing under the bark. EAB have been found in 16 different states including CT, causing billions of dollars in damage and severe ecological problems. Currently, the only method of control is to use environmentally dangerous chemical insecticides. In order to find a more environmentally sound control strategy, entomopathogenic fungal spores and nematodes were used in an approach targeting both adult and larval EAB. Adult EAB were exposed to increasing concentrations of fungal spores, and mortality was measured after 8 days. In addition, infested ash logs were treated with entomopathogenic nematodes. Although unable to show effectiveness with nematodes, treatment with fungal spores showed a dose dependent decrease in survival of adult EAB compared to an insecticide used as a positive control. These results demonstrate a promising biological control method that is safe for the environment.

Biography