White Grubs and Ambrosia Beetles:

Research in Ohio Nurseries by the USDA-ARS Horticultural Insects Research Lab

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The USDA-ARS Horticultural Insects Research Lab is part of the Application Technology Research Unit at the OARDC in Wooster, OH. We have a number of projects currently being conducted in ornamental nurseries in northern Ohio. For this presentation, we will focus on two projects from 2003. We also have several new projects planned for 2004.

Figure 1. Subsurface applicator, note the six nozzles.

Figure 2. Applicator in use.

Subsurface Treatments of Insecticides for Control of White Grubs in Nursery Crops:

- In 2003, we tested a multi-point subsurface applicator for delivery of insecticides to the root zones of field-grown nursery crops (Figure 1).
- Insecticides were applied by this applicator to serviceberry and crabapples for control of exotic white grubs (Figure 2).
- There was a preventive timing trial where a treatment of Marathon II (imidacloprid) was applied to serviceberry.
- There was also a rescue timing trial where treatments of Dursban or Talstar were applied to crabapples.
- Some trees were left untreated in both trials for comparison.
- The trials were evaluated by digging the plants out and breaking up the root balls to search for grubs (Figure 3).
- The average number of grubs per plant was high in both trials and almost all the grubs were oriental beetle (Table 1).

Table 1. Results of subsurface trials

Trial	Insecticide	Mean live grubs per tree	% Reduction of grubs
Preventive	Marathon II	13.4 a	40%
	Untreated	22.3 b	
Rescue	Talstar T & O	7.8 a	59.8%
	Dursban TNP	8.8 a	54.6%
	Untreated	19.4 a	

Figure 3. Subsurface trial evaluation

Monitoring Ambrosia Beetles and Other Wood-Boring Beetles:

- In 2003, we started trapping ambrosia beetles and other wood-boring beetles in ornamental nurseries. This was a new project for us.
- We plan to determine which species are present and when they occur during the season.

Funnel trap used for ambrosia beetles.

We thank the following nurseries for providing research sites, time, and/or materials: Arcola Creek, Brotzman's, Herman Losely & Son, Moretti, Ridge Manor, Roemer's, and Sunleaf.

Collaborators:
Charles Krause Heping Zhu
Richard Derksen Randy Zondag

Technical Assistance:
Betsy Anderson Jim Moyseenko
Andy Doklovic Barry Nudd

Some beetle species captured in the funnel trap.