

Diaprepes Update *Development of an IPM* *System*

Gary S. Bender
UCCE Farm Advisor
San Diego County

Loretta Bates
Staff Research Associate

Diaprepes abbreviatus
(Coleoptera: Curculionidae)



In So. Cal. the Adults Have Been Found On:

Fern

Avocado

Pygmy Date Palm

Peach

Bougainvillea

Ornamental Pear

Rose

Bottlebrush

**Night Blooming
Jasmine**

Birch

Lemon, Orange

Japanese Privet

Pine

Coral Tree

Live Oak

Camphor

Hisbiscus

India Hawthorne

Canna

Crepe Myrtle

California Pepper Tree

Ficus

Mandevilla

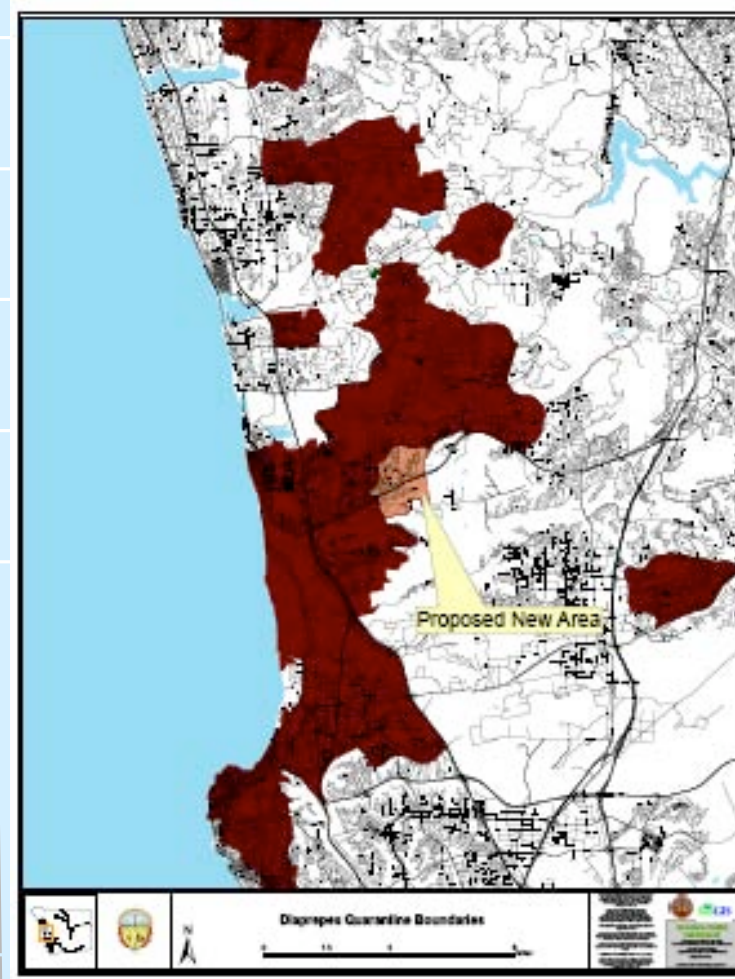
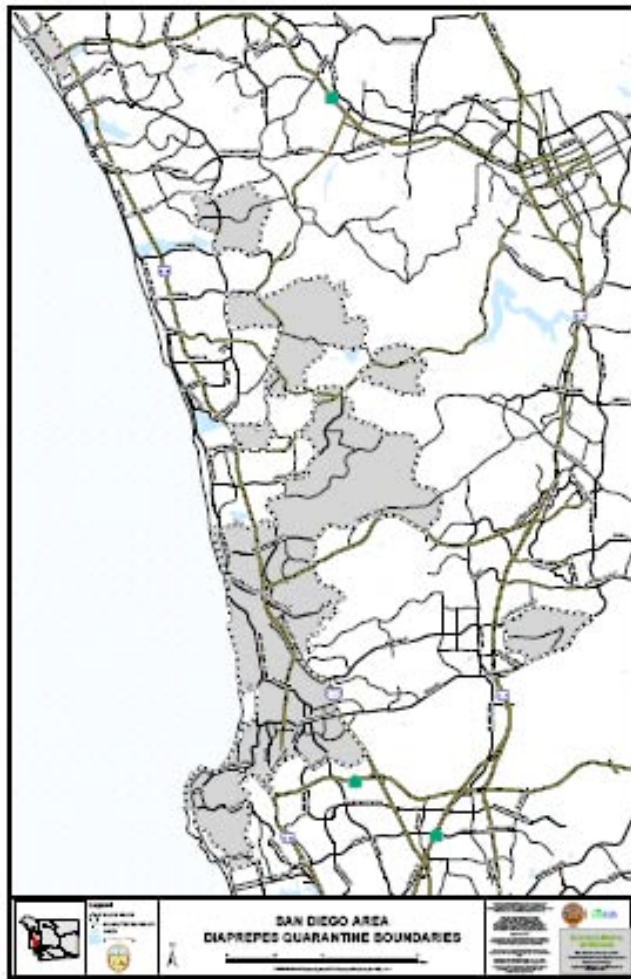
Brazilian Pepper

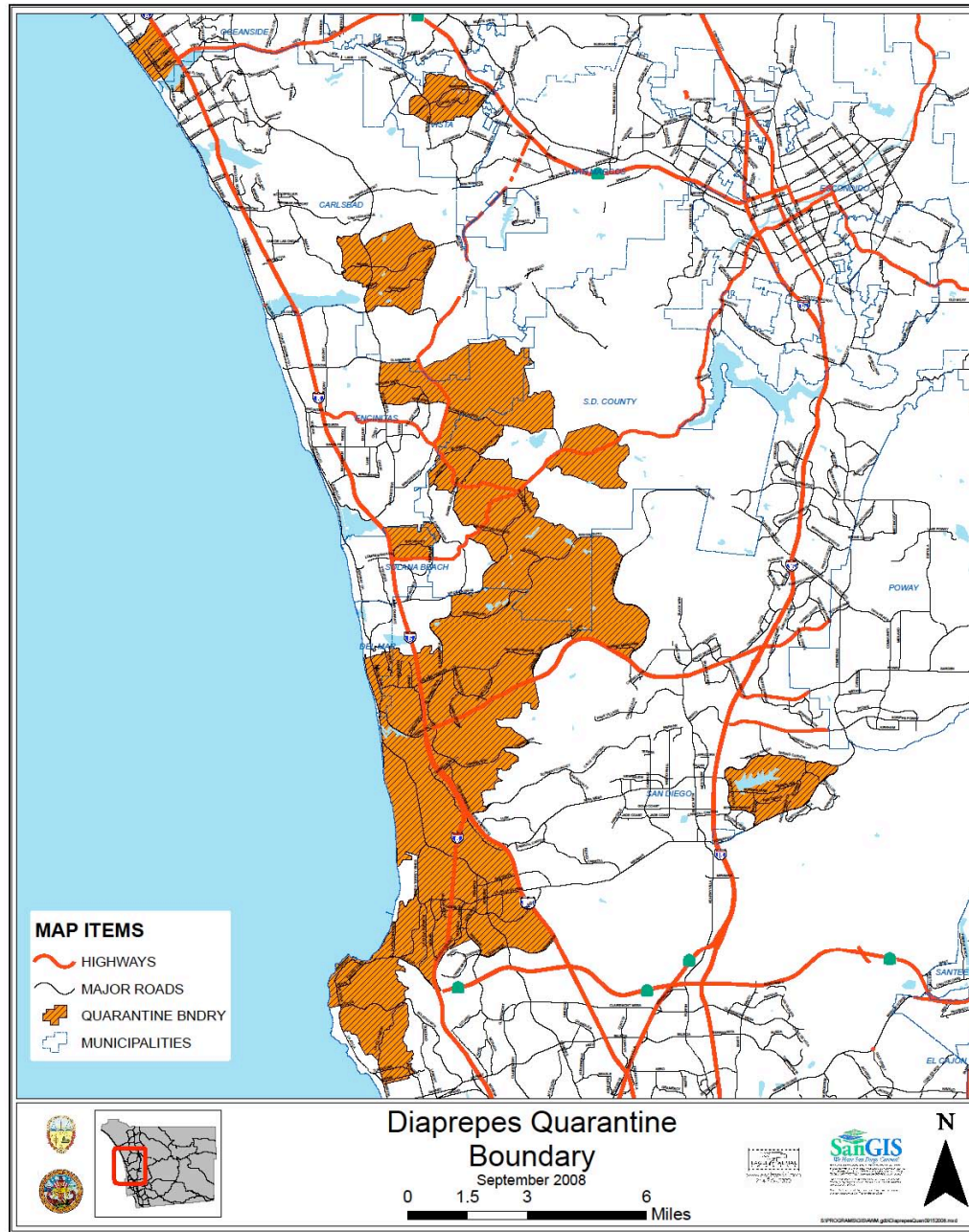
Ivy

Pittosporum

Golden Lantern Tree

Locations in San Diego County 2006 and 2007



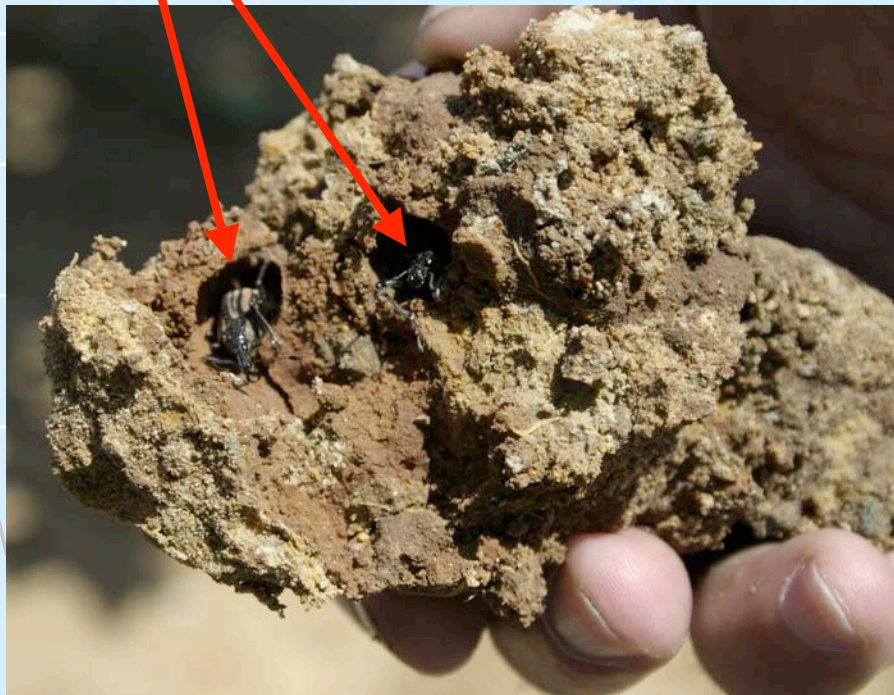


Larval Damage



Damage to roots

Diaprepes adult beetles ready to emerge from within earthen pupal cells



Larval Damage









Soil Treatment Trial

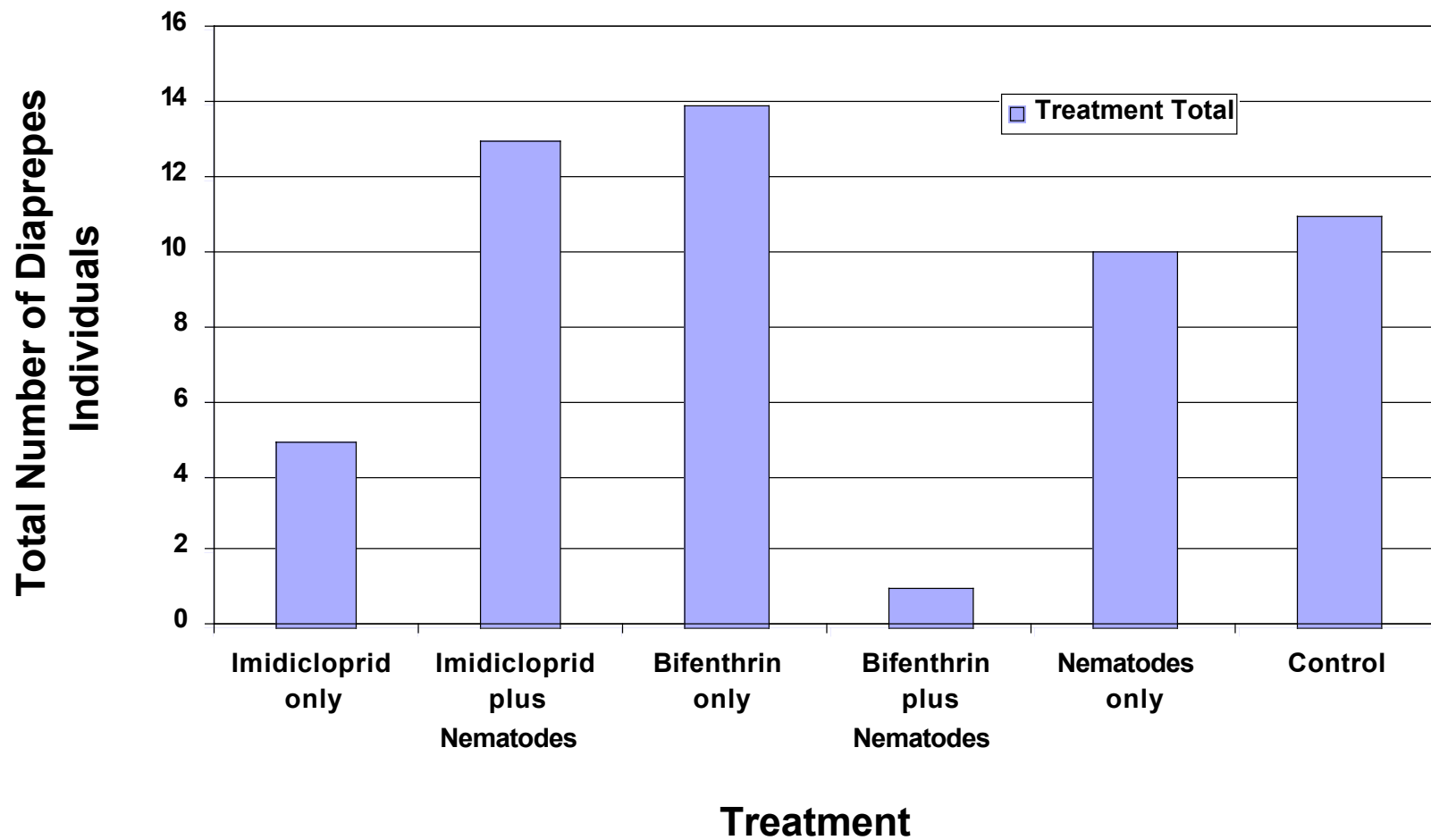
- Trial set up in October, 2007
- Thirty trees chosen that were “significantly affected stage 3”
- 5 trees per treatment
- Treatments:
 - Bifenthrin, bifenthrin plus nematodes
 - Imidicloprid, imidicloprid plus nematodes
 - Nematodes only
 - Control (no treatments)

- Nematodes (*Steinernema riobravis*) were added to the soil at 5 million per tree, one week after the insecticide treatments, irrigated for three hours

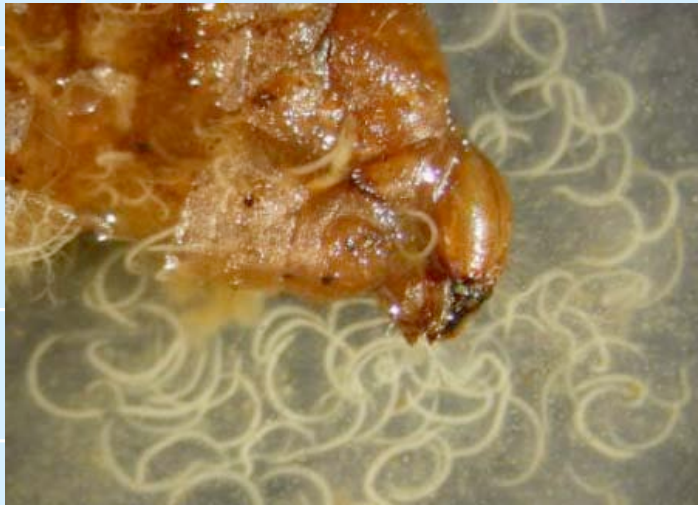
Evaluation

- Starting January 16, 2008, each tree was pulled out by a backhoe 2 days after an irrigation
- 40 gallons of soil from each hole was examined for all life stage (larvae, pupae, teneral adults)
- *This took 8 weeks!*

Diaprepes Insecticide/Nematode Trial 2007-2008
Larvae, Pupae, Teneral Adults (not emerged)

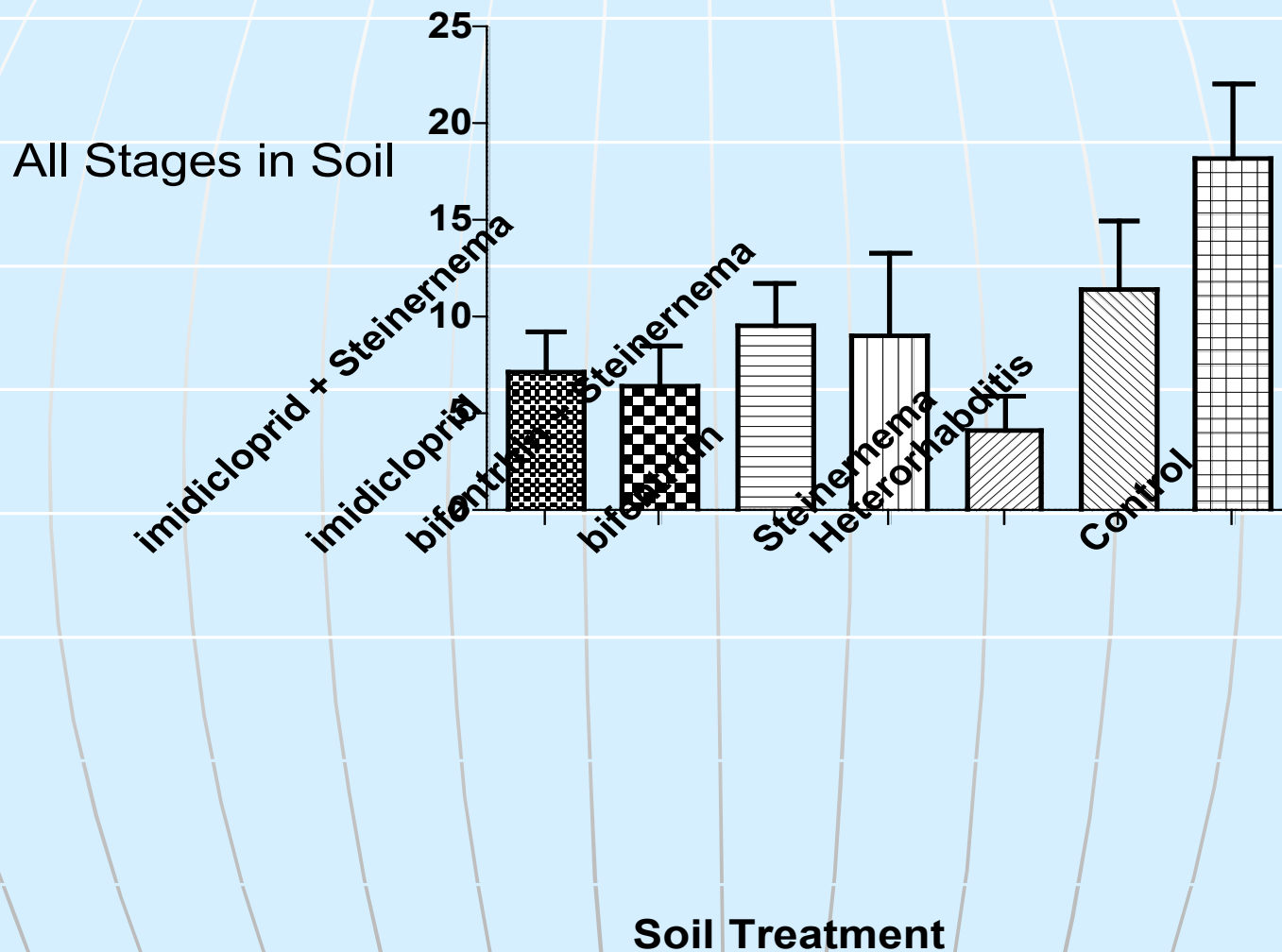


Biological Control Options



Heterorhabditis indica and *Steinernema riobrave* nematodes

Lemon Insecticide/Nematode Trial 2009



Significant at $P < 0.05$ Steinernema vs. Control

Mulch Trial on Calle Margarita

- Control – 4 reps of 9 tree units, no soil treatment
- Mulch – 4 reps of 9 tree units, 4 inches of wood chip mulch
- Fabric – 4 reps of 9 tree units, 8' x 8' fabric under each tree
- Dry soil layer – 4 reps of 9 tree units, 3 drippers under each at the bottom of 10" deep holes

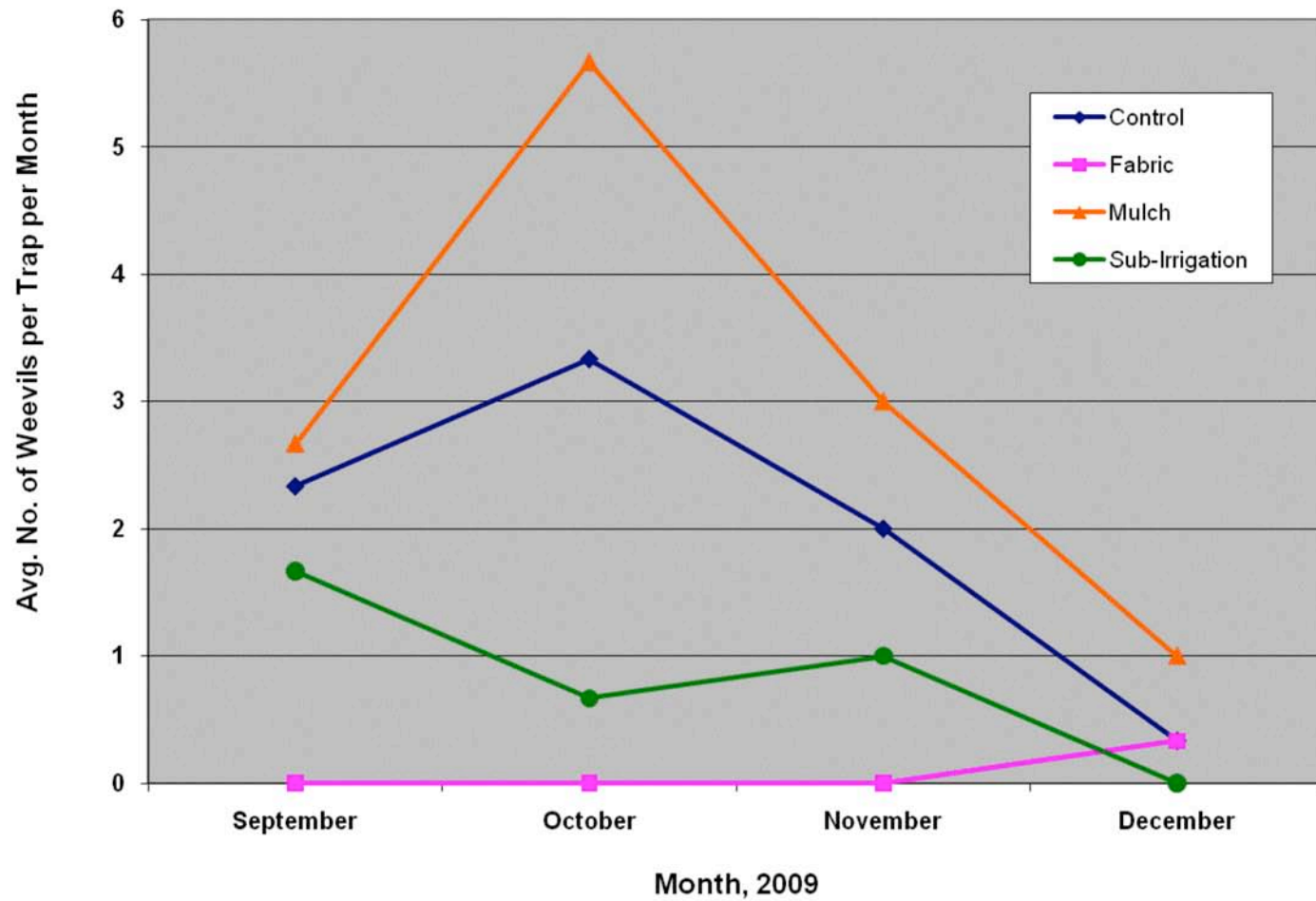


Landscape Fabric

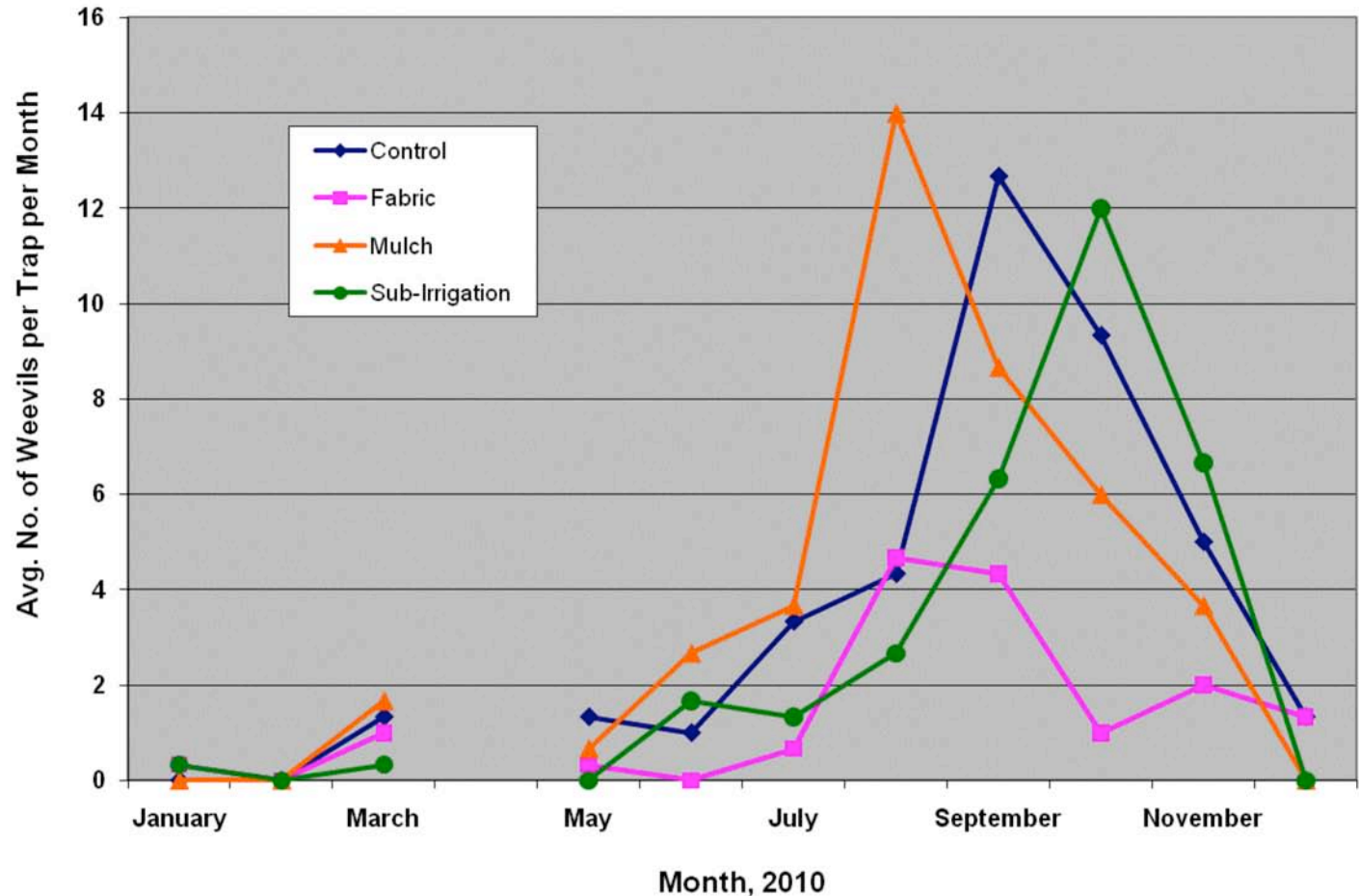
- **Weed-X**
 - Manufactured by Dalen Products, wholesale from L and L Nursery Supply
 - Fabric, tape, sod staples cost \$19.60 per tree
 - Not good for slopes because water will sheet off



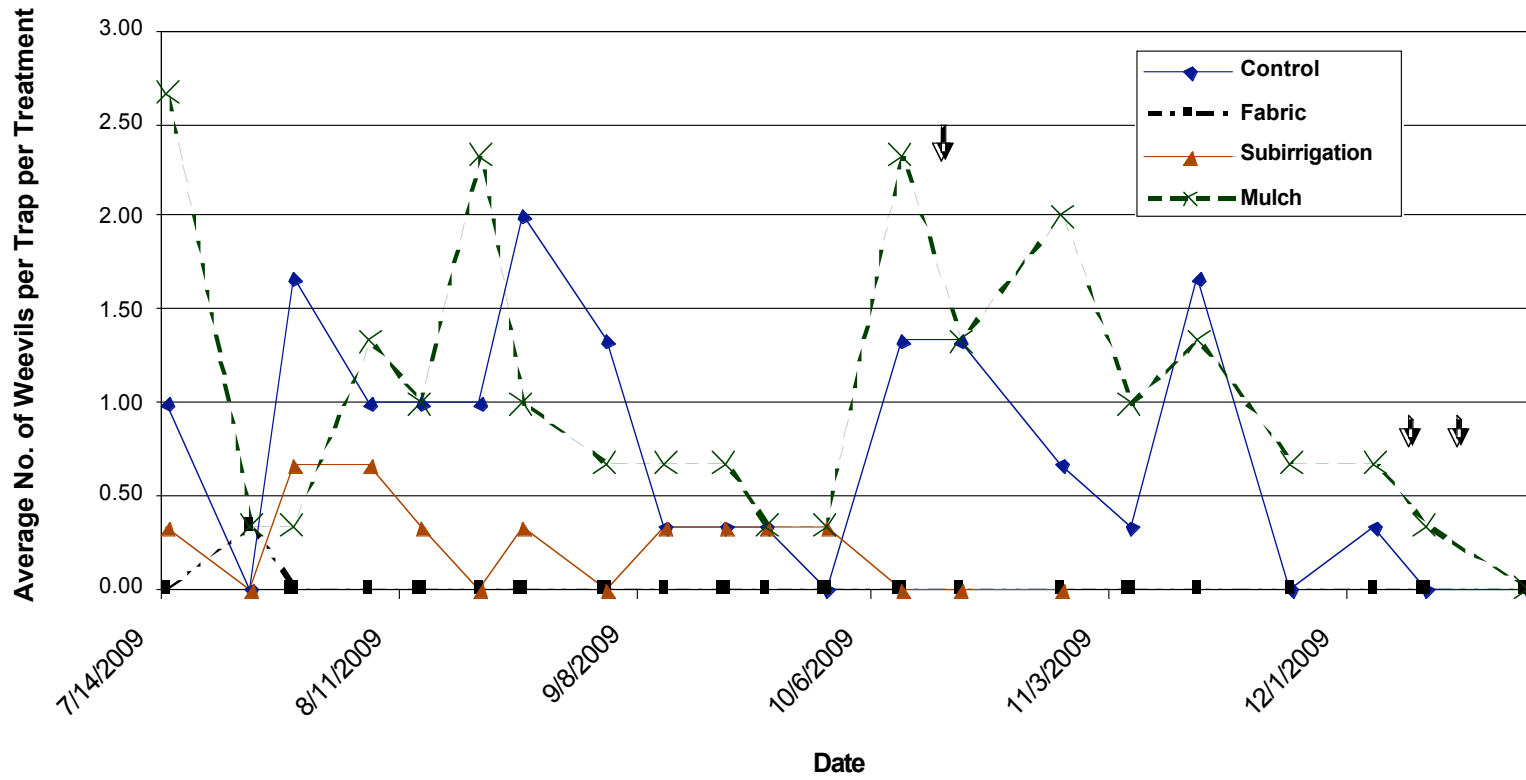
Diaprepes Root Weevil Trap Counts September through December 2009



Diaprepes Root Weevil Trap Counts January through December 2010



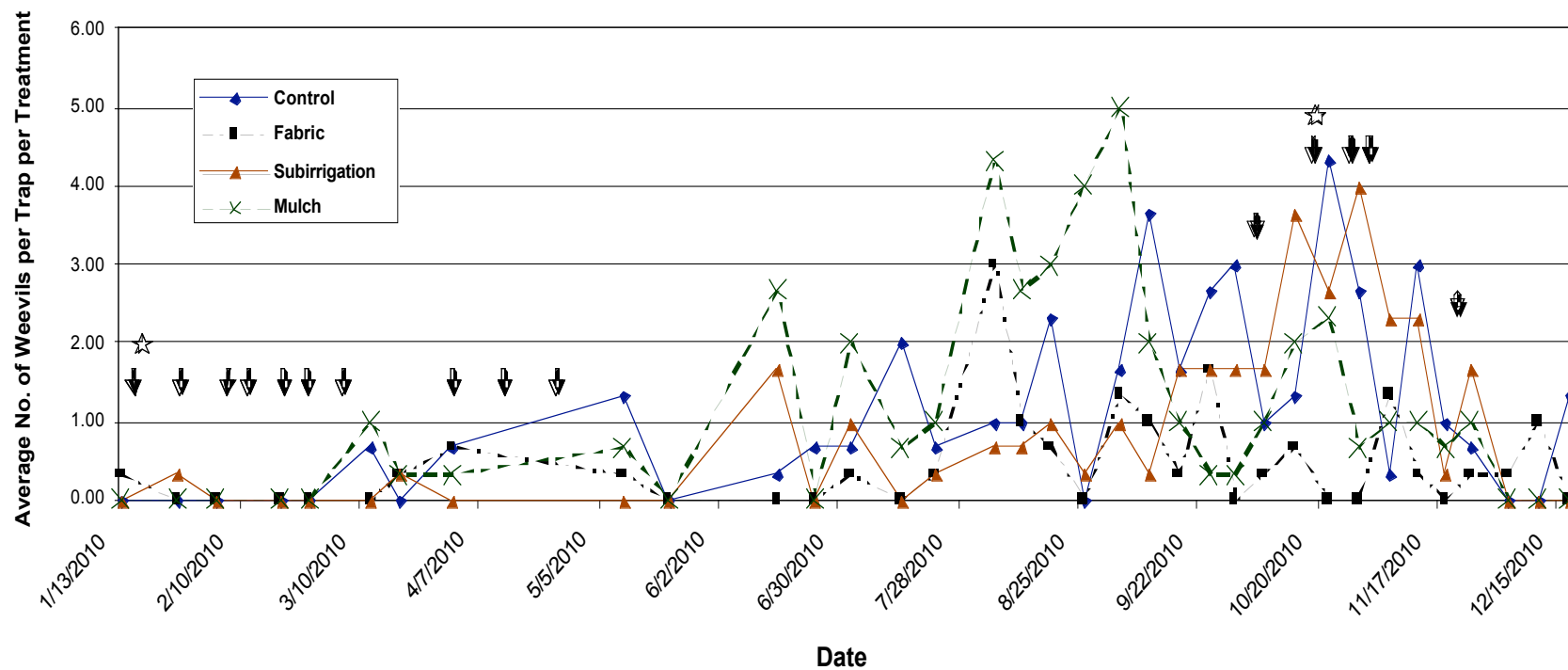
Weevil Management Trial 2009
3380 Calle Margarita, Encinitas, CA



↓ Rain Event

★ More than 1 inch (2.5 cm)

Weevil Management Trial 2010 3380 Calle Margarita, Encinitas, CA



Rain Event
 More than 1 inch (2.5 cm)

Aprostocetus vaquitarum Parasitoid Wasp



UF-IFAS
R. Duncan

Thank you!
gsbender@ucdavis.edu

