Invasive Ambrosia Beetle Conference The Situation in California August 12 - 14, 2012

Meeting sponsored by:
The Hofshi Foundation
University of California, Riverside
UC Center for Invasive Pest Research
The Huntington Botanical Gardens
The Los Angeles Arboretum

Invasive Ambrosia Beetle Conference The Situation in California August 12 - 14, 2012

Session 5

Monitoring and Control Strategies



Agricultural Research Organization (ARO) Institute of Plant Protection



Lessons and insights from the chemical control trials of *E. fornicatus* and its fungal symbiont in avocado plantations in Israel

Zvi Mendel, Alex Protasov, Michal Sharon, Netta Okon-Levy, Miriam Eliyhu, Yonathan Maoz, Omer Golan, Michael Noy, Stanley Freeman

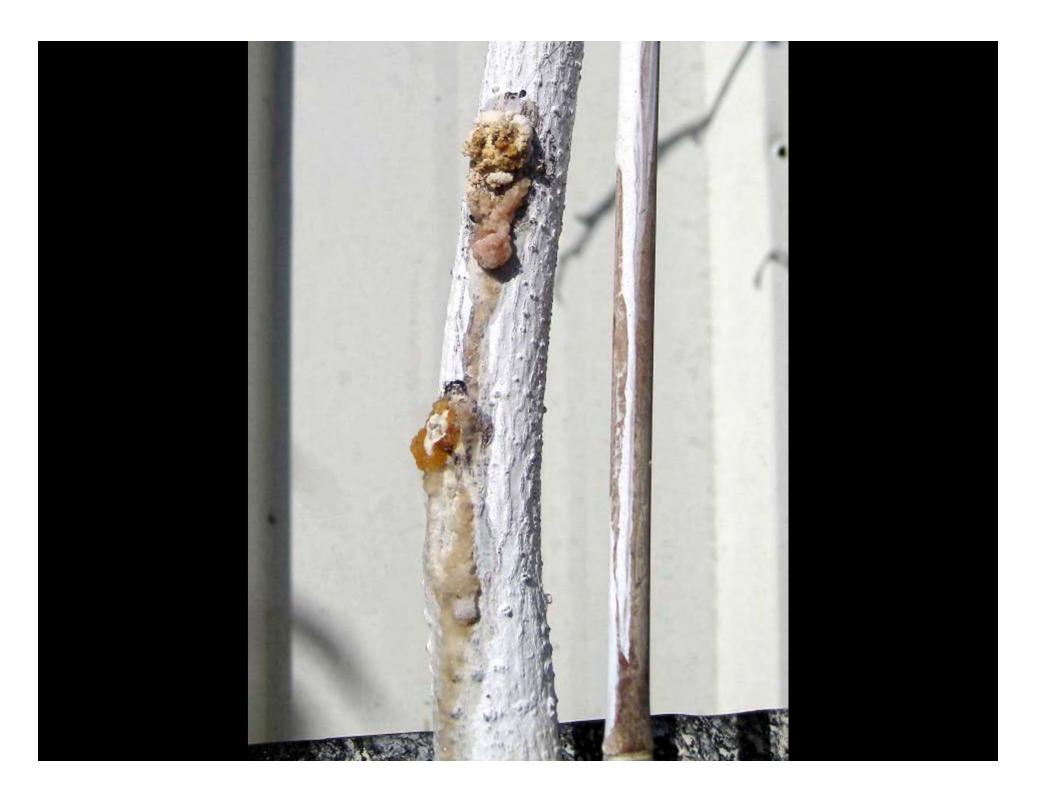














Insecticides and fungicides evaluated in lab and field trials

	Class	Generic name	Trials
<u>Insecticide</u>	<u>s</u> Pyrethroids	Bifenthrin Acrinathrin	Field Field
	Abamectins	Emamectin benzoate	Lab and field
Ryanodine Receptor Modulator		Cyantraniliprole Chlorantraniliprole	Lab and field Lab and field
Neonicotinoids		Acetamiprid Clothianidin Imidacloprid Thiamethoxam	Lab and field Lab and field Lab and field Lab and field
tetramic acid derivatives		Spirotetramat	Lab
	neem tree product	Azadirachtin	Lab
<u>Fungicides</u>	Azoles	Tebuconazole Carbendazim	Lab and field Lab and field
	DMI	Prochloraz	Lab and field

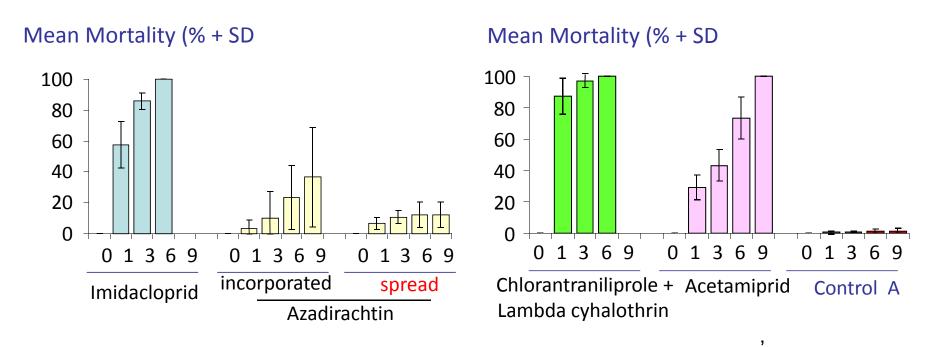






Lab tests

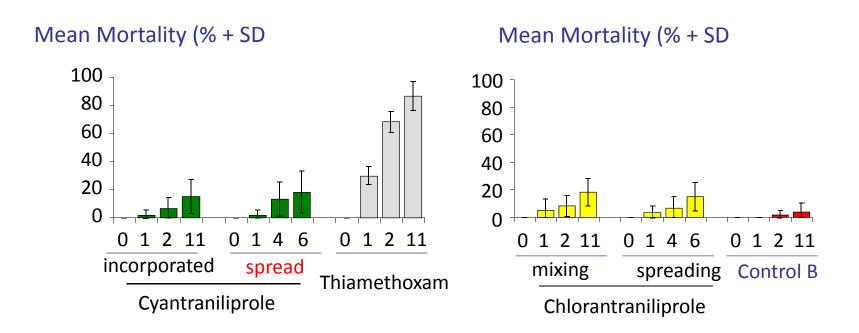
Systemic insecticides tested against the larvae feeding on fungus growing on PDA with the incorporation of 10 ppm of the tested chemical



Tested insecticide (days since larvae introduction)

Lab tests

Systemic insecticides tested against the larvae feeding on fungus growing on PDA with the addition of 10 ppm of the tested chemical (cont.)

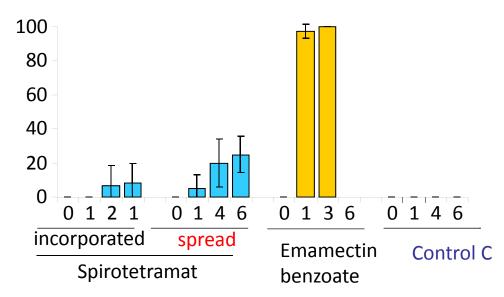


Tested insecticide (days since larvae introduction)

Lab tests

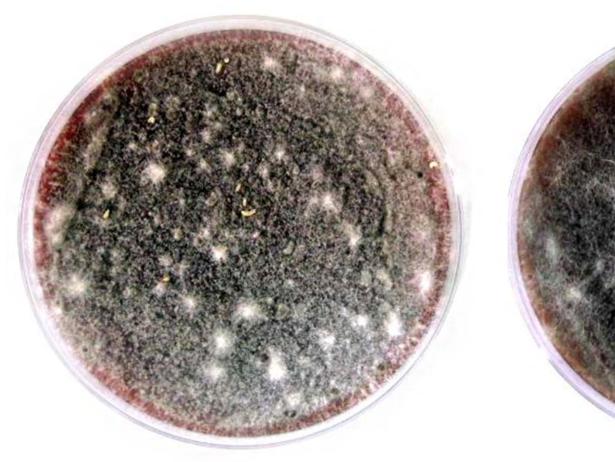
Systemic insecticides tested against the larvae feeding on fungus growing on PDA incorporated with 10 ppm of the tested chemical (cont)

Mean Mortality (% + SD



Tested insecticide (days since larvae introduction)

Larvae after 24h feeding *Fusarium* treated PDA







Emamectin benzoate

Larvae after 24h feeding *Fusarium* treated PDA



Azadirachtin



Untreated PDA



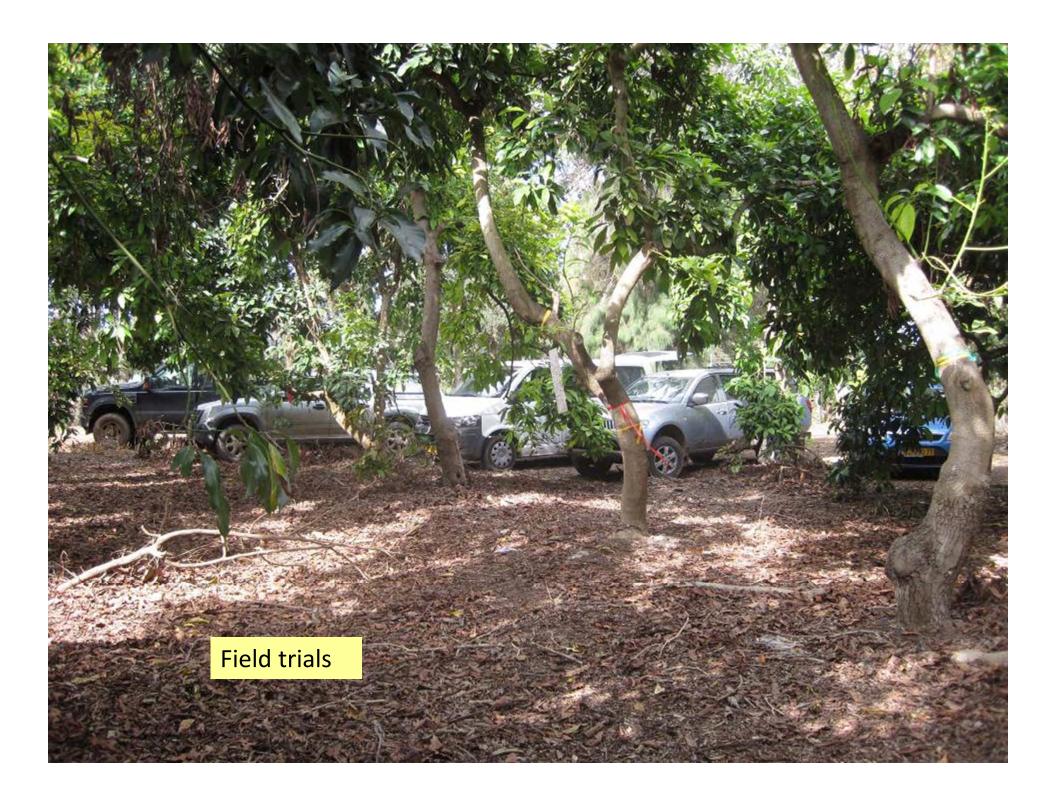










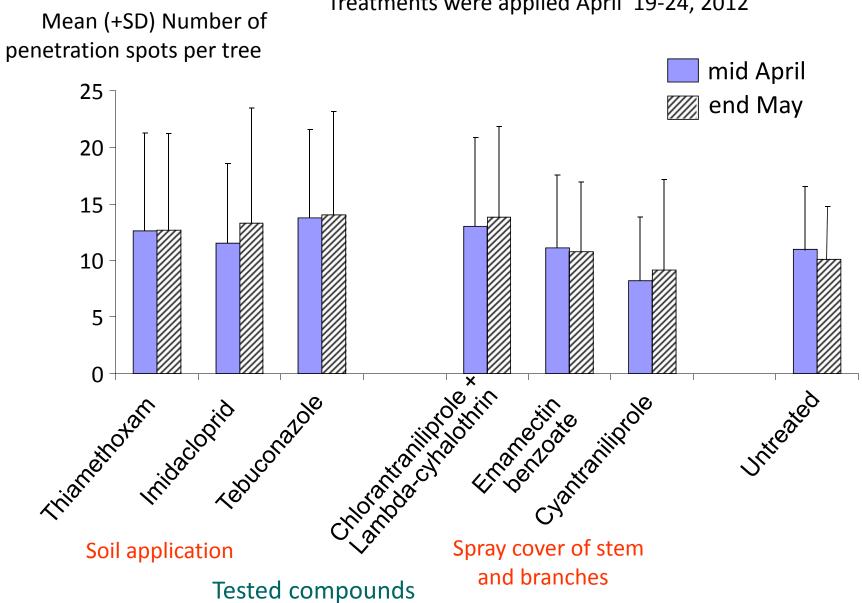






Eyal, Hass, 9 yr old plantation

Treatments were applied April 19-24, 2012

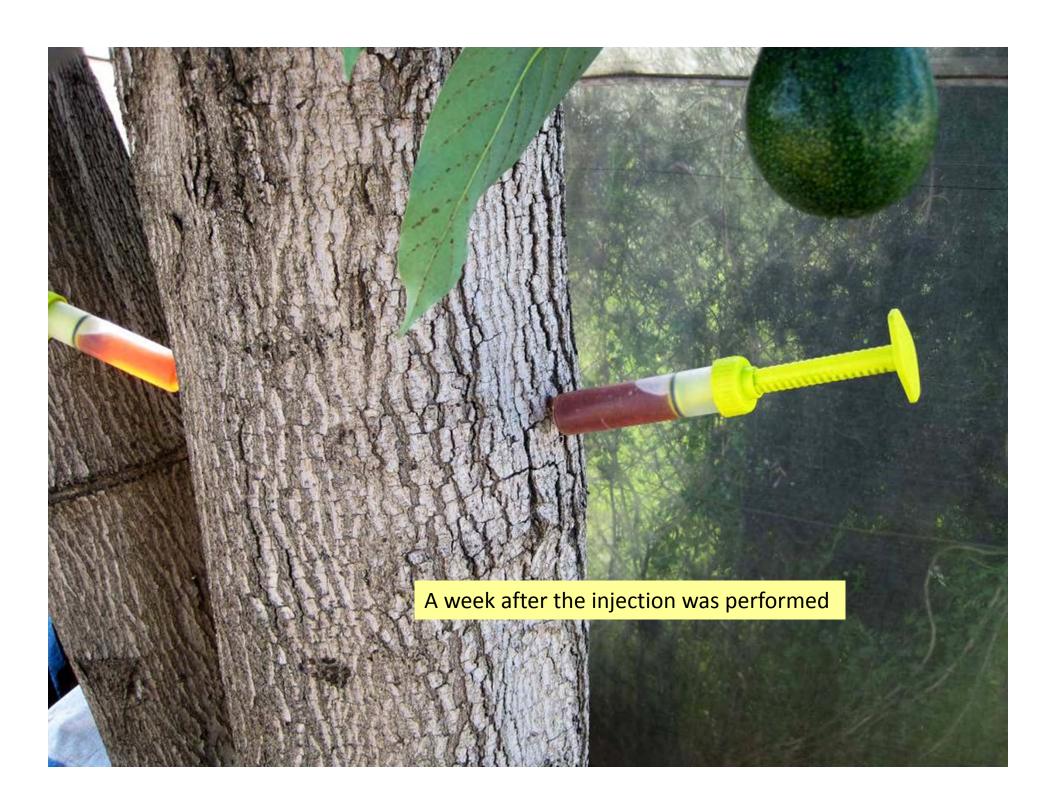






Exposure of beetle to insecticide treated bark surface











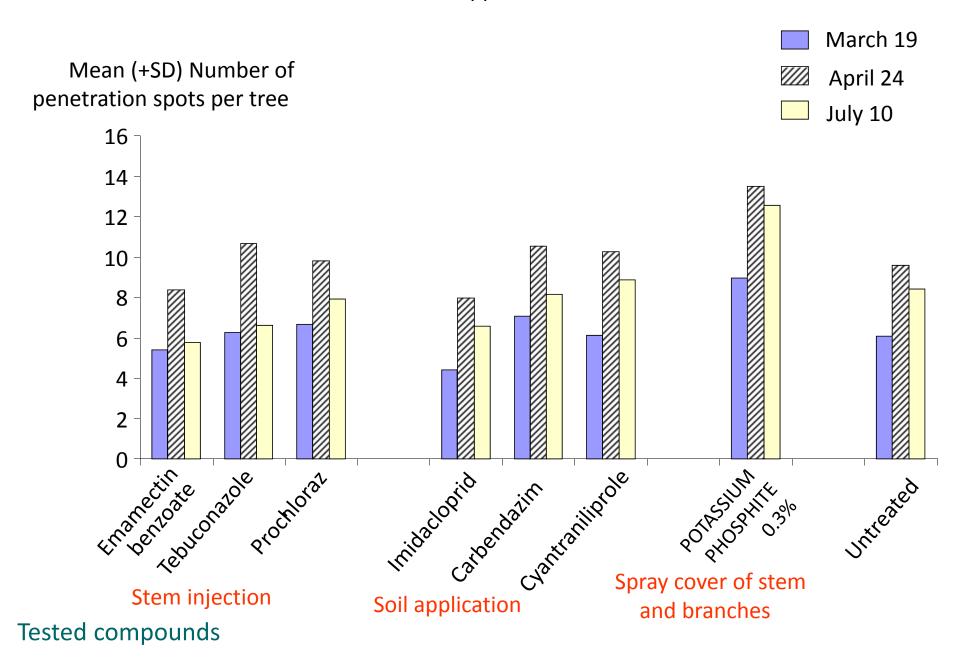






Ga'ash, Hass, 6 yr old plantation

Treatments were applied March 19, 2012

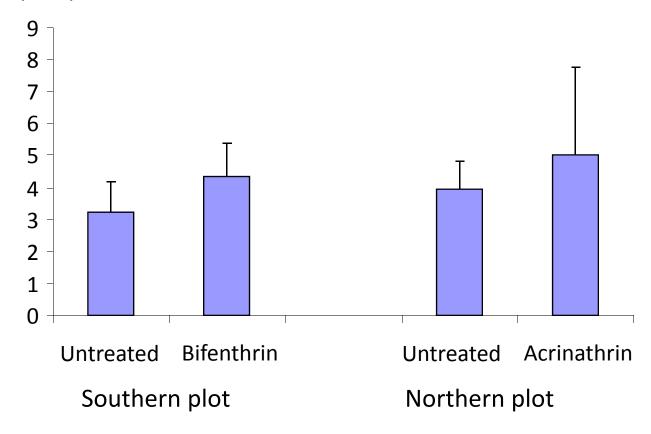


Magshimim, ~ 30 yr old plantation, different varieties

Spray cover of stem and branches

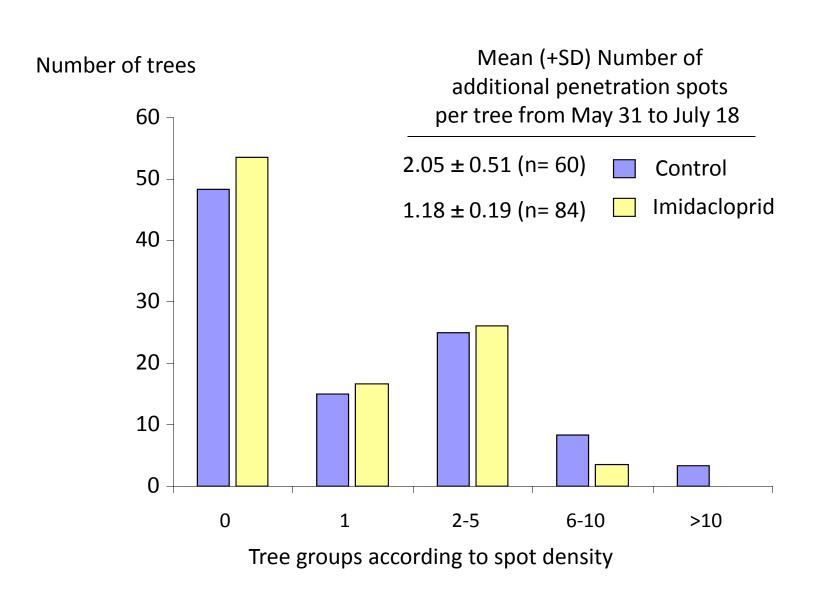
Treatments were applied in April 23, 2012 The trees were sampled in May 31, 2012

Mean (+SD) Number of penetration spots per tree



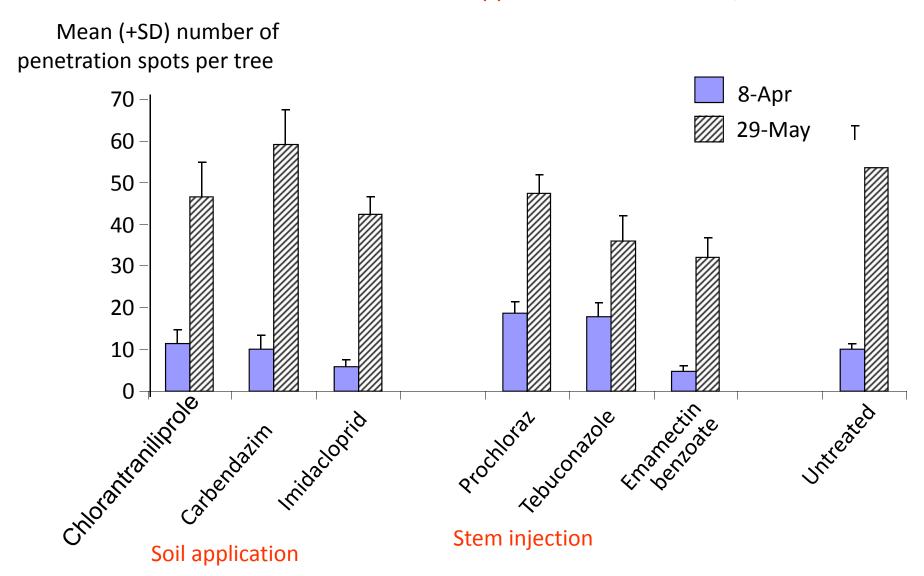
Magshimim, ~ 30 yr old plantation, different varieties

Soil application of Imidacloprid on June 16 and July 14, 2012



Rishpon, Reed ~ 17 yr old plantation

Treatments were applied on March 14-15, 2012

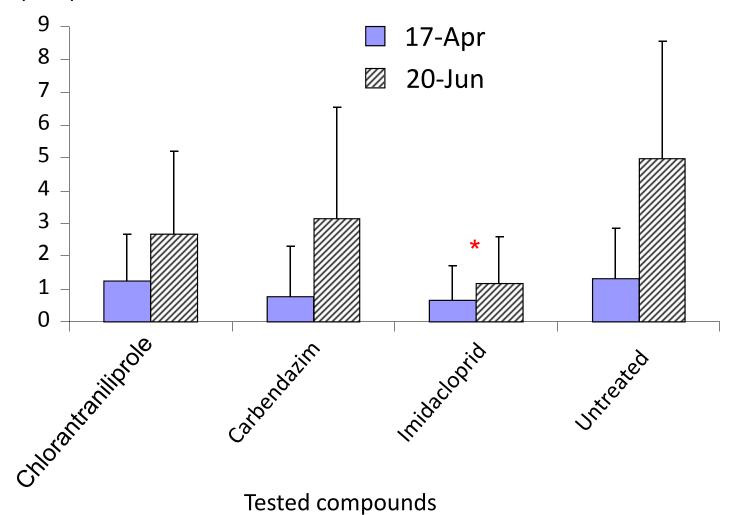


Tested compound

Palmachim, Hass 5, yr old plantation

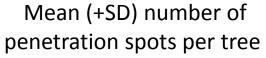
Treatments were applied on April 2, 2012, Soil application

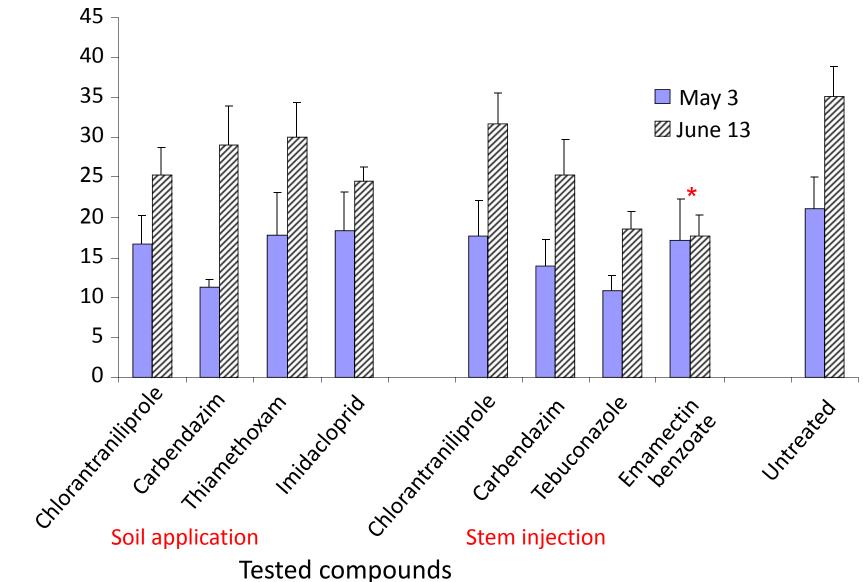
Mean (+SD) number of penetration spots per tree



Palmachim, Pinkerton, 15 yr old plantation

Treatment were applied on March 29, 2012

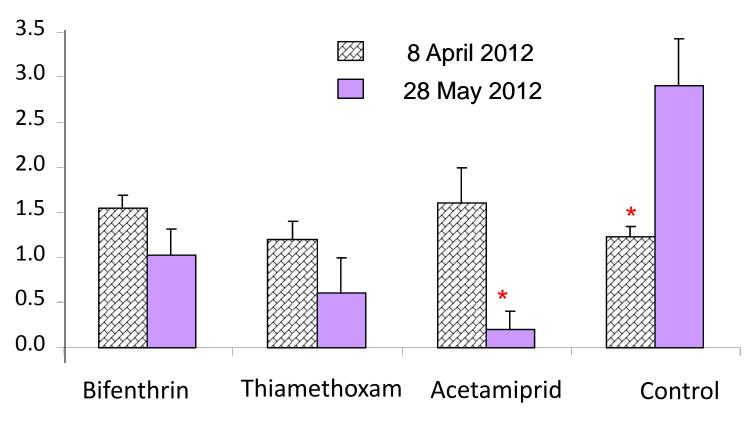




Rishpon, Reed ~ 17 yr old plantation

Treatments were applied on selected branches on April 8, 2012

Mean (+SE) number of penetration spots per tree



Tested compounds

Thank you for your attention

Direction for future research ??