

Arthropod Pests in Almonds

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Almond Pest Management Guidelines - UC IPM - Microsoft Internet Explorer provided by cs.uclac.edu

Address: http://www.ipm.ucdavis.edu/IPM/selectnewpest.almonds.html

University of California • Agriculture and Natural Resources
UC IPM Online
 STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM

UC IPM Home
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For more information, see this UC IPM book:
 Almonds
 Integrated Pest Management for Almonds

How to Manage Pests
 Landscapes, gardens, & turf
 Homes, people, & pets
 Agriculture
 Weather data & products
 Degree-days
 Interactive tools & models
 Educational Resources

How to Manage Pests Almonds

Pest Management Activities by Season—tell you what you should do
 program. Includes: [Year-Round IPM Program](#), [Annual Checkup](#) (PDF, 14K)

[Year-Round IPM Program for Almonds](#)

- [Dormant/Delayed Dormant](#)
- [Bloom to Postbloom](#)
- [Fruit Development](#)
- [Harvest](#)
- [Postharvest](#)

UC IPM Pest Management Guidelines—University of California's official pesticide, and nonpesticide alternatives for managing pests in agriculture, floriculture, and

[Index to crops](#) | [Index to crops](#) | [PDF's to print](#) | [Recent updates](#)

General Information

- [Dormant Spur Sampling and Treatment Guidelines](#) (1/05)
- [Approximate Impact Ratings of Various Pest Management Tools Against Natural Enemies](#) (1/05)
- [General Properties of Fungicides Used in Almonds](#) (1/05)

Diseases

- [Almond Leaf Scorch](#) (1/05)
- [Alternaria Leaf Spot](#) (1/05)
- [Anthracnose](#) (1/05)
- [Aureolaria Dist Spot \(Pink Dist Fungus\)](#) (1/05)

Insects and Mites
 (continued)

- [European Red Mite](#) (1/05)
- [Fruitree Leafroller](#) (1/05)
- [Leaftooted Bug](#) (1/05)
- [Navel Orangeworm](#) (1/05)
- [Obliquebanded Leafroller](#) (1/05)
- [Oriental Fruit Moth](#) (1/05)
- [Peach Silver Mite](#) (1/05)
- [Peach Twig Borer](#) (1/05)

♦ **Year Round IPM check list**

♦ **How is the season divided?**

♦ **What are some general information sources**

♦ **Can I find single pests?**

IPM PMG Online

Almond Peach Twig Borer, Navel Orangeworm and
Ant Damage, Columns from Left to Right



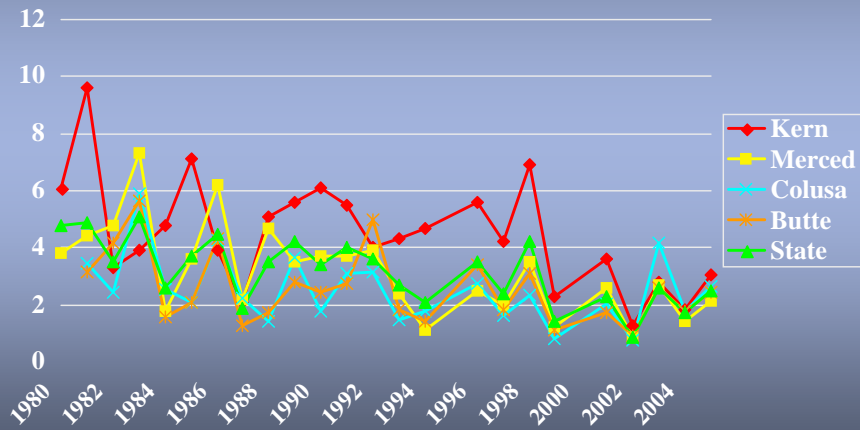
Unlocking

Navel Orangeworm Management in Almonds

Points to Consider for:

- Monitoring
- Predicting
- Controlling

Historical Almond Inedibles, 1980-2005, a Comparison (NP)



MUMMY LOAD AND NOW HARVEST INFESTATION

AVERAGE # MUMMIES PER TREE	# GROWERS	AVERAGE % NOW INFESTATION AT HARVEST
<2 (0 - 1.9)	15	1.69 (0 - 5)
>2 (2.6 - 177)	21	3.53 (0.2 - 14)

Effects of Pest Management Practice on Reduction of NOW Infestation

♦ Insect Management Practice

- 1 Winter Cleanup (<2)
 - a Orchard near source
 - b Orchard Isolated
- 2 Early Harvest
- 3 1a and 2 combined
- 4 1b and 2 combined
- 5 Properly timed May spray
- 6 Properly timed hull split spray

Peterson et al 1985

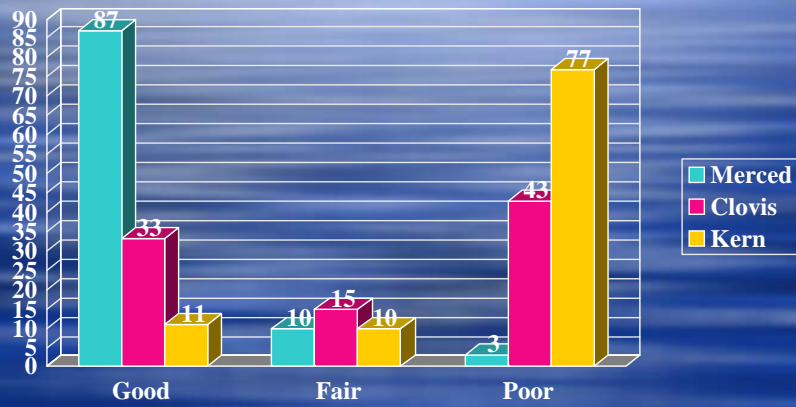
♦ % Infestation >

- 1 a 50-70
- 1 b 70-80
- 2 70
- 3 75
- 4 80-90
- 5 40-60
- 6 40-60

Hullsplit is When the Door Opens ! Look for Infestation on Early Splits



Shell Seal, Nonpareil, 1998 (% in each category)



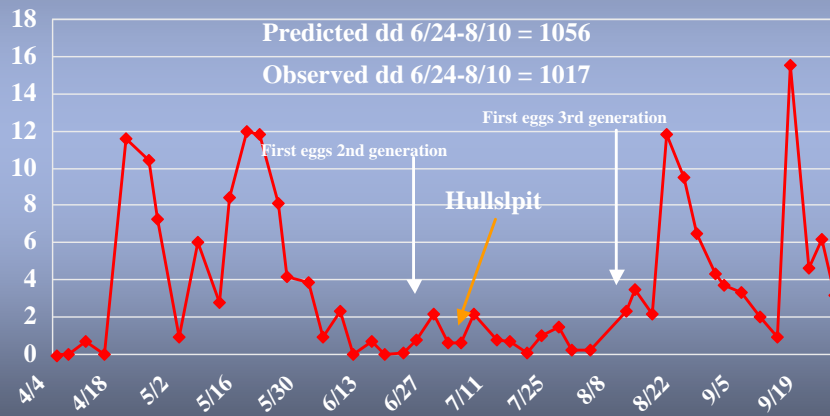
Orchard Edge Infestation



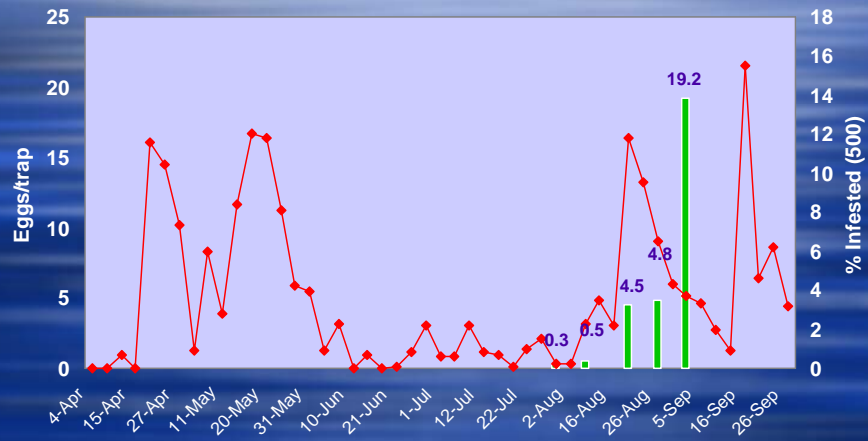
Egg Trap Monitoring In June



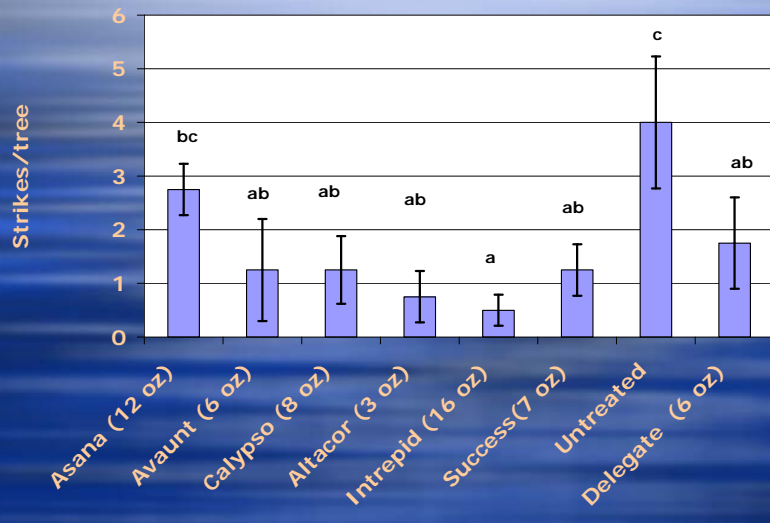
Monitoring Oviposition Can Be Used To Predict Early Harvest



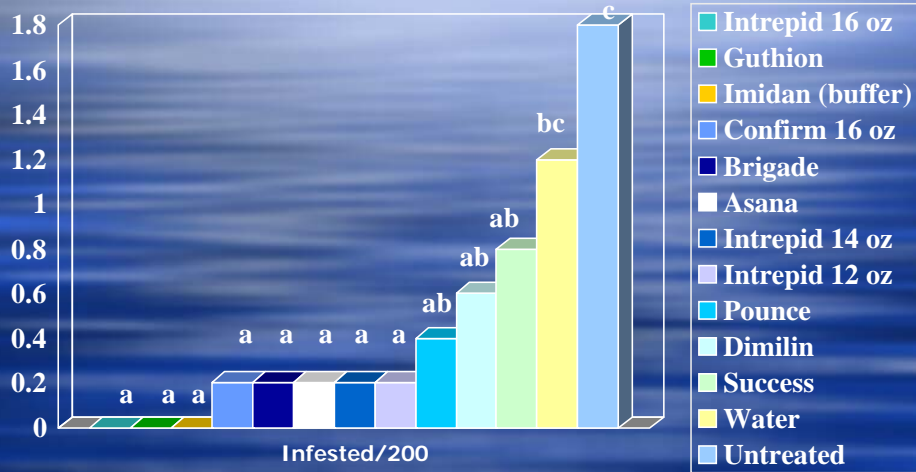
Relationship Between NOW Egg Deposition and Infestation, Wasco, CA



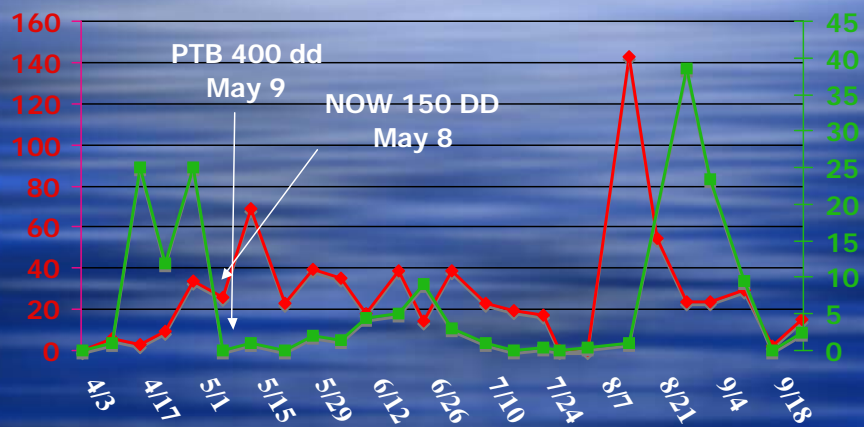
Effects of Various Insecticides, Oriental Fruit Moth



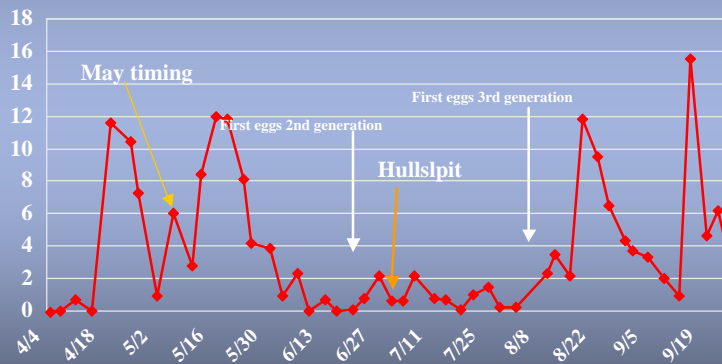
Efficacy of Various Insecticides on NOW Infestation, Pistachio



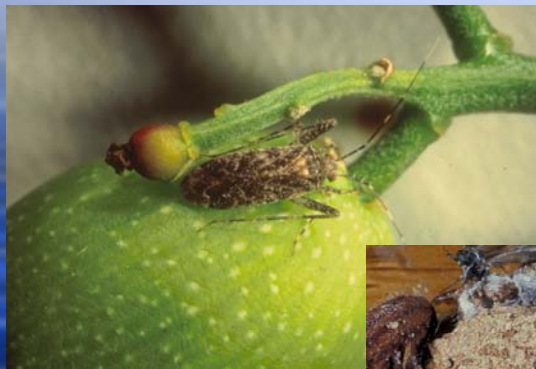
NOW Seasonal Oviposition, PTB Flight, Almond, 2001



Hullsplit Timing: @ initiation (inside orchard) to 5%



Selective Material Integrate with Biocontrol

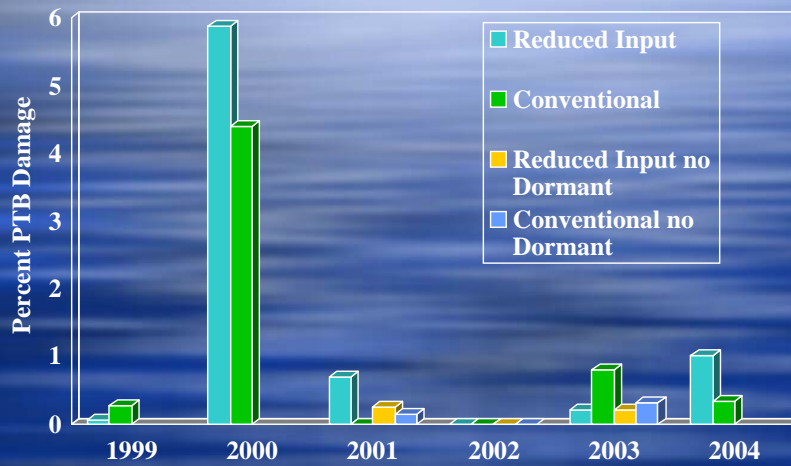




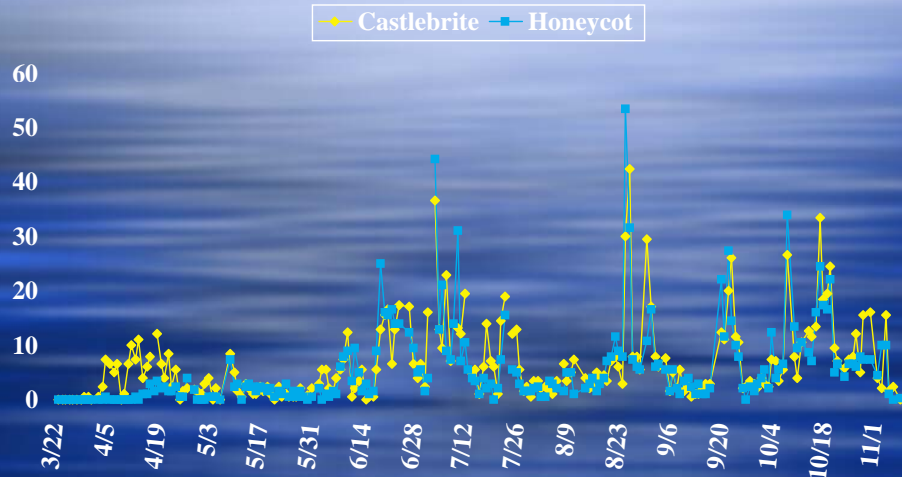
New Approaches to PTB Management in Almonds



Six Year Comparison of Standard Dormant and Reduced Risk Approach



Seasonal Flight PTB, Arvin CA



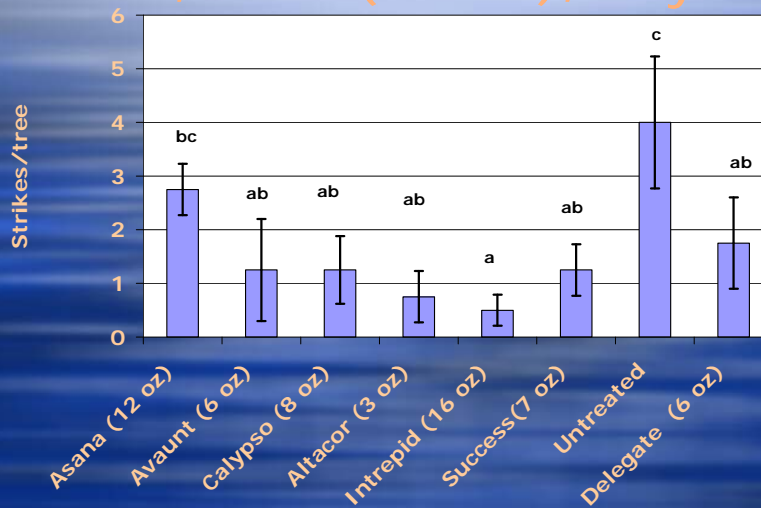
Insecticides With Environmental Concerns

- ◆ Azinphosmethyl - organophosphate
- ◆ Chlorpyrifos - organophosphate
- ◆ Methidathion - organophosphate
- ◆ Phosmet - organophosphate
- ◆ Dibrom - organophosphate
- ◆ Diazinon - organophosphate
- ◆ Carbaryl - carbamate
- ◆ Esfenvalerate - pyrethroid

Insecticides with Reduced Risk

- Intrepid (methoxyfenozide)
- Seize (pyroproxifen)
- Centaur (buprofezin)
- Dimilin (diflubenzuron)
- Success (spinosad)
- Delegate (spinetoram)
- Altacor (rynaxypyr)**
- Avaunt (indoxacarb)**
- Belt (flubendiamide)**

Effects of Various Insecticides, Oriental Fruit Moth, treated June 2, 2006 (600dd), July 3



Peach Twig Borer Control, Almonds, Jan 26, 2004 @ 100 GPA

Zalom et al

