

Organic and IPM in the Orchard

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UC Cooperative Extension (UCCE)

- “Cooperative Extension is the primary educational unit of UC’s Division of Agriculture -founded in 1913, and is supported by county, state, and federal governments”



UCCE based in more than 50 county offices

1. County farm advisors,
Area IPM advisors,
Statewide specialists (UCD, UCB, UCR)
2. The 4-H program
3. Nutrition, family & consumer sciences advisors
4. The UC Master Gardener Program

- **EXAMPLE**

Monterey County

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- [Dr Maria de la Fuente](#)
Specialty: Mushrooms,

Advisors

[Larry J Bettiga](#)

Title: Viticulture

[Michael D Cahn](#)

Title: Irrigation & Water

[Steven T. Koike](#)

Title: Plant Pathology

- [Lynn Schmitt-McQuitty](#)

Title: 4-H Youth

- [Richard Smith](#)

Title: Vegetable & Weed

Cross County Advisors

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Title: Strawberries

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Title: Water Quality

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Title: Envir horticulture



- [Laura Tourte](#)

UNIVERSITY OF CALIFORNIA AGRICULTURE & NATURAL RESOURCES

UC IPM Online

Statewide Integrated Pest Management Program

www.ipm.ucdavis.edu

Agricultural Pests



Home, Garden, Turf & Landscape Pests



Oriental fruit moth—*Grapholita molesta*

Pest Notes – brief information

Oriental fruit moth—*Grapholita molesta*

Oriental fruit moth larvae are white or pink with a brown head; they grow up to 0.63 inch long. They do not produce webbing, distinguishing them from other caterpillars. Adults are small, grayish moths almost 0.5 inch long.

[Identification of species](#) | [Life cycle](#)

Damage

Larvae bore into twigs and young shoots and into the center of green and ripening fruit or nuts to feed around the pit. Shoots wilt and die back 1 to several inches from the tip, causing shoot strikes or flagging.

Solutions

In backyards, oriental fruit moths are hard to control. There are no effective biological control agents, and dormant oil sprays do not work. Insecticides are very difficult to time effectively because caterpillars rapidly bore into hidden locations. Pheromone traps can help you determine when moths are flying and laying eggs. No treatment is recommended for almonds or apricots.

Oriental fruit moth larva



Damage to fruit

52 + different crops

- more expanded info

- [Alfalfa](#)
- [Almond](#)
- [Apple](#)
- [Apricot](#)
- [Artichoke](#)
- [Asparagus](#)
- [Avocado](#)
- [Bermudagrass Seed Production](#)
- [Caneberries](#) (Blackberry, Raspberry)
- [Carrot](#)
- [Celery](#)
- [Cherry](#)
- [Citrus](#)
- [Cole Crops](#)
- [Corn](#)
- [Cotton](#)
- [Cucurbits](#)
- [Dry Beans](#)
- [Eggplant](#) (UPDATES)
- [Fig](#)
- [Floriculture](#)
- [GarlicCucurbits](#)
- [Cucurbits](#)
- [Dry Beans](#)
- [Eggplant](#) (UPDATES)
- [Fig](#)
- [Floriculture](#)
- [Garlic](#)
- [Grape](#)
- [Kiwifruit](#)
- [Lettuce](#)
- [Nectarine](#)
- [Olive](#)
- [Onion](#)
- [Ornamental Nurseries](#)
- [Peach](#)
- [Pear](#)
- [Pecan](#)
- [Peppermint](#)
- [Peppers](#)
- [Pistachio](#)
- [Plum](#)
- [Pomegranate](#)
- [Potato](#)
- [Prune](#)
- [Rice](#)
- [Small Grains](#)
- [Spinach](#)
- [Strawberry](#) (IN ENGLISH) [En español](#) (PDF)
- [Sugarbeet](#)
- [Tomato](#) (UPDATES)
- [Turfgrass](#), Commercial
- [Walnut](#)

Agricultural Pests



UC Pest Management Guidelines

Peach

Oriental Fruit Moth

Scientific name: *Grapholitha molesta*

(Reviewed 4/10, updated 4/10)

DESCRIPTION OF THE PEST

DAMAGE

MANAGEMENT

Biological Control

Organically Acceptable Methods

Mating disruption orchards

Conventional orchards

All orchards

Overview

- What is IPM? Use beneficial insects, reduced-risk chemicals (including organic) but less harmful for environment (water/air pollution) to show equal control with conventional.
- Requires knowing pest, monitoring, research best solution

**Reduced risk
Organic**

Conventional

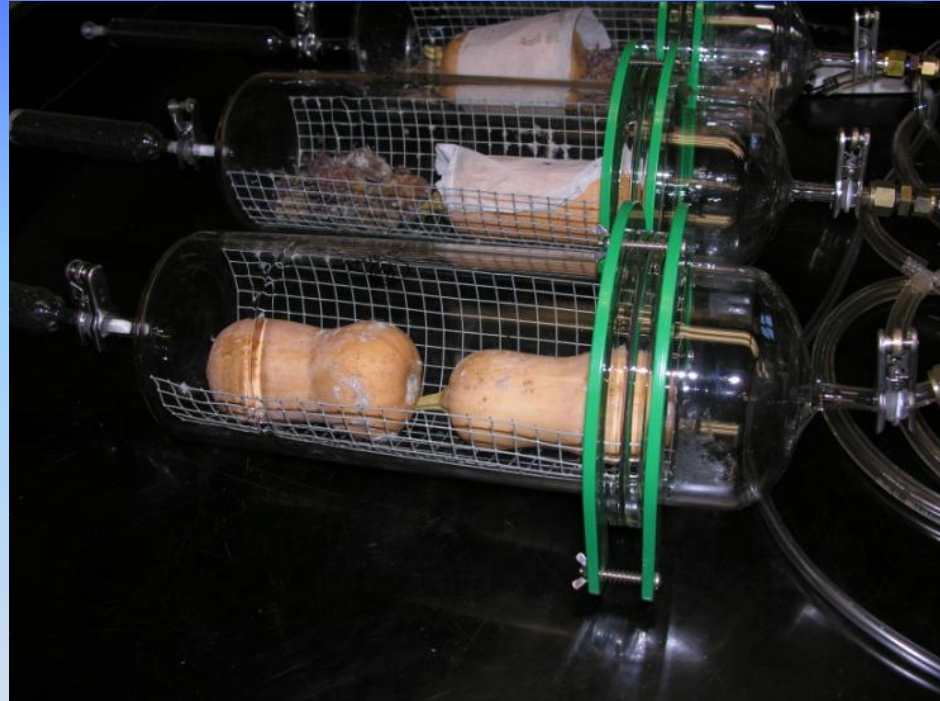
Quick basics

- In some insects males fly and females do not
- Males attracted to pheromone traps
- Start as egg-larva-pupa-adult (moths below)
- Target sprays to larval stage, pheremones to adult



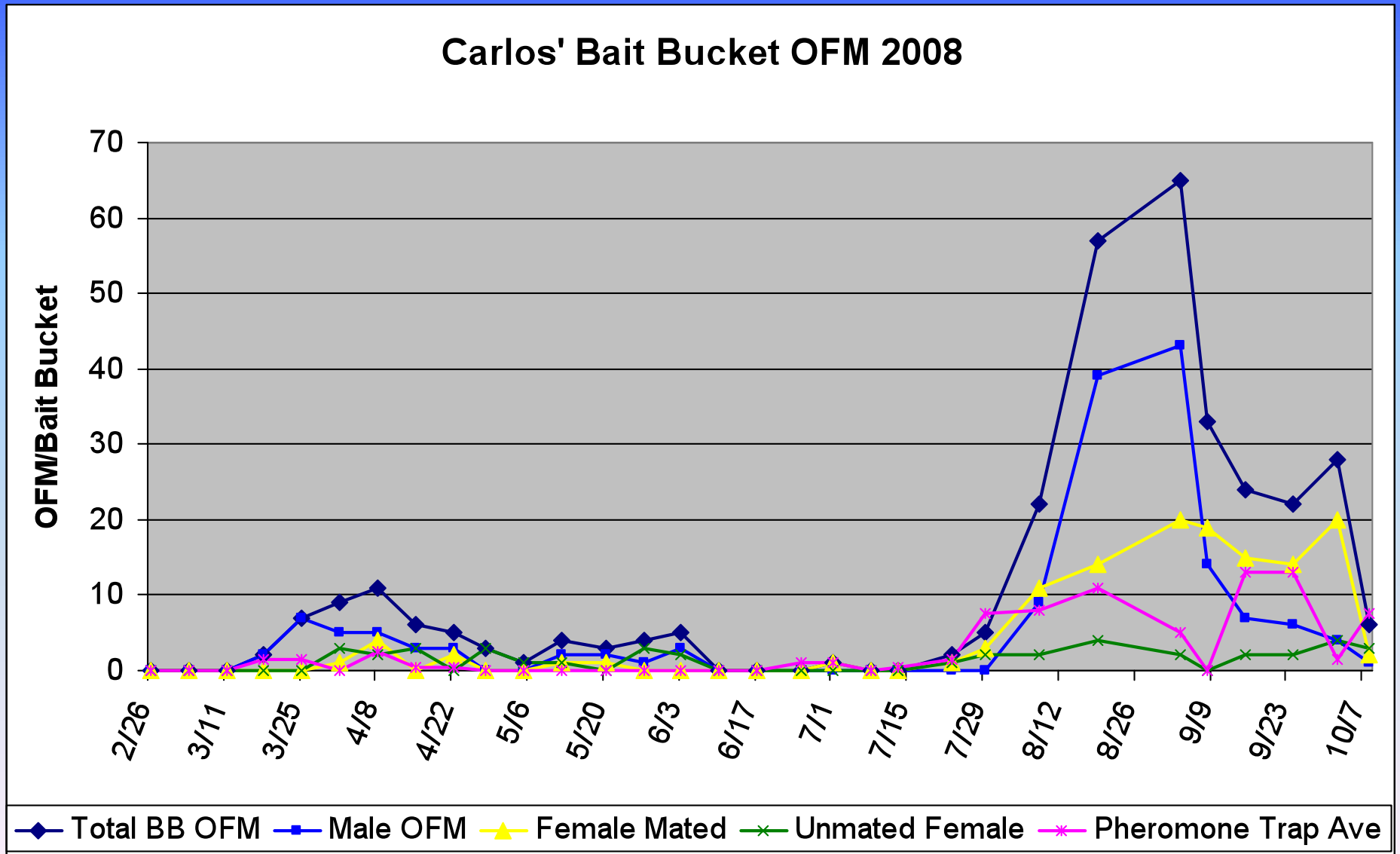
Create a pheromone (*science)

- Pheromones
 - Lots of insects (females)
 - Clean air
 - Isolate scents



So what?

Carlos' Bait Bucket OFM 2008



Peach monitoring

(* Science)

- OFM (Oriental fruit moth)
- PTB (Peach twig borer)
- Katydid (Fork-tailed bush)
- SJS (San Jose Scale)



Shoot strike (OFM or PTB)



- Monitor traps
- Monitor plant indicators-
foliage and fruit

OFM vs PTB

- Monitor fruit (too late)



OFM Parasite Sunflower Project

- Beneficial *Macrocentrus ancylivorus*
- Sunflowers next to peaches
- Attract good bugs



Peach and nut moths



**Oriental
Fruit**



**Codling
moth**



**Peach
twig**



**Navel
orangeworm**



**Omnivorus
leafroller**



**Obliquebanded
leafroller**

Special Thanks to:

Andrew Molinar, SRA

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DeAnna Romero, SRA

assistant to Dr. Kent Daane

What is IPM?

Integrated Pest Management

IPM in Grapes, Stone Fruit, Nuts
Kearney Agricultural Center
Parlier, CA



Weed Research & Information Center



UNIVERSITY OF CALIFORNIA • COOPERATIVE EXTENSION & AGRICULTURAL EXPERIMENT STATION

- **Online Education Programs** <http://wric.ucdavis.edu>
- **Homeowner**, Landowner and Master Gardener training
 - [Video](#) :: How to identify weeds :: 2011
 - [Video](#) :: Principles of weed control :: 2011
 - [Video](#) :: Weed control techniques:: 2011
- **Seminars**
 - [Video](#) :: 2011 Spring :: Weed control :: Brad Hanson
 - [Video](#) :: 2011 Spring :: Herbicide resistant sorghum: :: Kassim Al-Khatib
 - [Video](#) :: 2010 Fall :: Resistance to herbicides in weeds: :: Albert Fischer
 - [Video](#) :: 2010 Summer :: Organic weed control :: Tom Lanini
- **Specific weed issues**
 - [Video](#) :: Controlling nutsedge in the garden :: 2009
 - [Video](#) :: Controlling perennial weeds :: 2009

Organic Weed Control:

How effective is it?



- WeedPharm (20% acetic acid)
- GreenMatch (55% d-limonene, from citrus rinds)
- GreenMatch Ex (50% lemongrass oil)
- Maratec (50% clove oil)
- WeedZap (45% clove oil and 45% cinnamon oil).

Organic Weed Control:

How effective is it?

Reasonably effective control **IF**:

- Weeds are young (12 days old or less)
- Add organic surfactants or spreaders
- work best at temperatures above 75 degrees.

