

# **Management of Borers in Peach Trees**

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January 2007**

# Peach Tree Borers



## Two species:

- Similar in damage
- Different in **WHERE** & **WHEN** they attack tree

# Borers in peach trees



- Peachtree borer
  - Attack healthy tree at soil line
  - One generation per year



- Lesser peachtree borer
  - Attack injured scaffold branches
  - Two generations per year

# Life cycle of peach borers

- Overwinter as larvae
- Adult: clearwing moth
  - **Wasp mimic**
  - **Active in daytime**
- Eggs:
  - **Laid in cracks or under bark scales**
  - **400 eggs per female**
  - **Hatch in 8 - 10 days**
- Larva: feed on inner bark
- Pupa: under bark



# Control of peach borers

- **Cultural**
- **Mechanical**
- **Chemical**
- **Behavioral**

# Cultural control of borers

- Train trees to form wide angles
- Promote healthy trees
- Avoid practices that injure bark
  - Over load of fruit
  - Improper pruning
  - Mowing injury
  - Fertilizing
  - Damage during harvest

# Mechanical control of borers

- **‘Worming’**
- **Effective**
- **Insert knife or wire into entry hole**
- **Smash the larvae!**
- **Do in early spring or late fall**
- **Practical in small plantings**

# Chemical control of borers

- **Spray method?**
- **What chemicals?**
- **Number of sprays?**
- **Timing?**



# Spray method for borers

- **Airblast cover sprays**
  - **Helps suppress lesser PT borer**
  - **Not much help for peachtree borer**
- **Bark drench**
  - **Needed for good control**
  - **Low pressure**
  - **High volume: 1/2 to 1 gal per tree**
  - **Target on tree:**
    - **Soil line for peachtree borer**
    - **Trunk & scaffolds for lesser PT borer**

# Chemical control of borers

- Insecticide drench
  - Preventive via residual action
  - Curative via fumigant action
- Thorough coverage is critical
- Beware of obstructions at soil line
  - Ground cover, weeds
  - Prunings

# Insecticides for borers in commercial orchards

<u>Product</u>	<u>Effect</u>	<u>Number appltns</u>	<u>Limitations Target</u>
<b>Lorsban</b> <ul style="list-style-type: none"><li>• <b>4EC</b> (<i>RUP</i>)</li><li>• <b>75WG</b></li></ul>	<b>12 wks</b>	<b>1</b>	<b>bark only</b> (14 day PHI)
<b>Thionex</b> <ul style="list-style-type: none"><li>• <b>3EC</b></li><li>• <b>50W</b></li></ul>	<b>6 wks</b>	<b>2</b>	<b>bark + leaves</b> (21 day PHI)

# Insecticides for borers in home fruit plantings

- lindane
  - No longer available
  - Commonly used in past years
- chlorpyrifos (Dursban)
  - Sales halted in December 2001
- permethrin
  - Bonide's new 'Borer Miner Killer'
- endosulfan
  - 'Hi-Yield Thiodan'

# Chemical control

## In new plantings:

- Control of peachtree borer is critical in first 3 years
- Dip roots & crown before planting
- Year 2: trunk drench

# Chemical control

In new plantings:

- Dip roots & crown before planting
  - **Product choices**
    - Lorsban 4EC, 3 qt/100 gal
    - Lorsban 75WG, 4 lb/100 gal
    - Thionex 3EC, 2.7 qt/40 gal
    - Thionex 50W, 4 lb/40 gal
  - Dip to few inches above graft scar
  - Plant immediately or allow to dry
  - Do not allow tree to remain in contact with dip solution

# When & where to spray?

First, define your problem:

- How severe:
  - Light to moderate?
  - Severe?
- Which species:
  - PTB?
  - LPTB?
  - Both?

# Number & timing of sprays for borer control in the Midwest

- If history of light problems, 1 spray:
  - in early to mid-August
- If history of severe problems, 2 sprays:
  - If LPTB is main concern:
    - first spray in mid-May
  - If PTB is main concern:
    - first spray in mid-June
  - second spray in early to mid-August
- Get more exact timing with traps



# Monitoring borers with traps

- Pheromone lure
  - Synthetic imitation of moth's natural sex attractant
  - Attracts male moths
  - Each lure lasts 4 - 6 weeks
- Knowing when moths are active helps determine best time to apply insecticide to target young larvae



# Monitoring borers with traps



**Sticky trap**



**Bucket trap**



**the target moth**

# Monitoring borers with traps

- For lesser peachtree borer:
  - **Set up in late April**
  - **Hang 4 ft above ground**
- For peachtree borer:
  - **Set up in late May**
  - **Hang 3 ft above ground**
- If trapping both species, put traps at least 50 feet apart

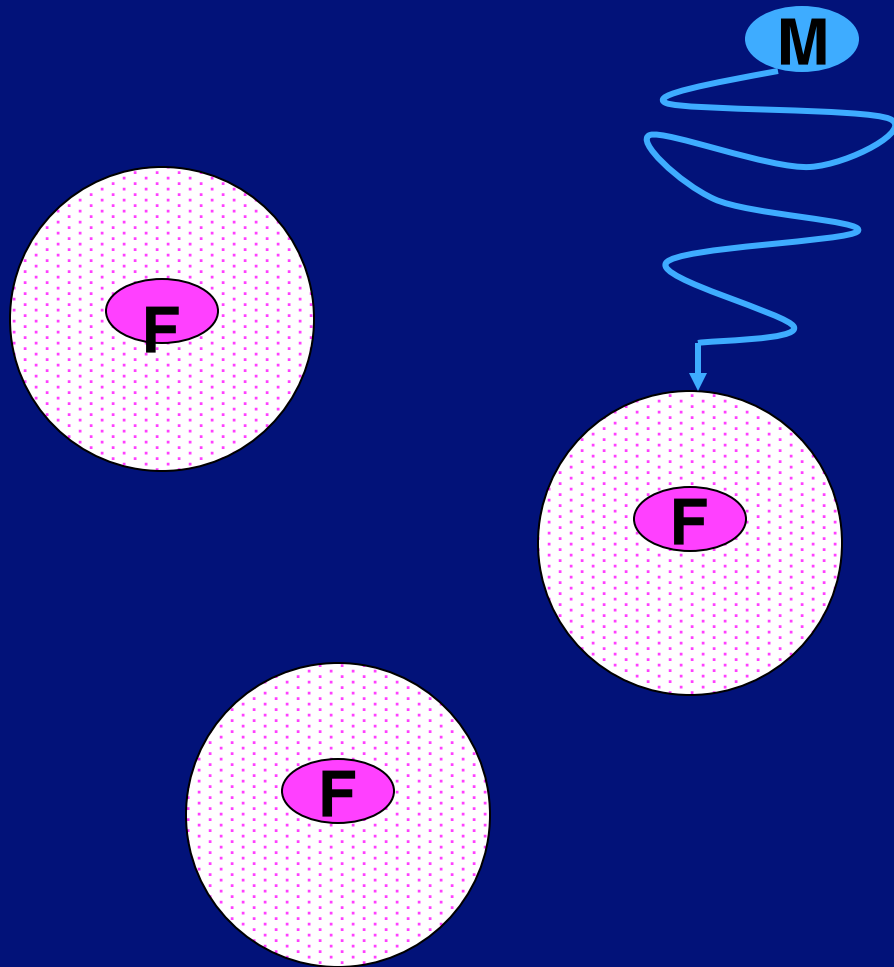
# Trap trends expected

<b>Species &amp; Last generation</b>	<b>First catch</b>	<b>catch</b>	<b>Peak catch</b>
<b>LPTB, 1st early</b>	<b>early</b>	<b>mid-</b>	
	<b>May</b>	<b>June</b>	<b>July</b>
<b>LPTB, 2nd early</b>	<b>mid-</b>		<b>mid-</b>
	<b>July</b>		<b>Aug.</b>
<b>Sep.</b>			

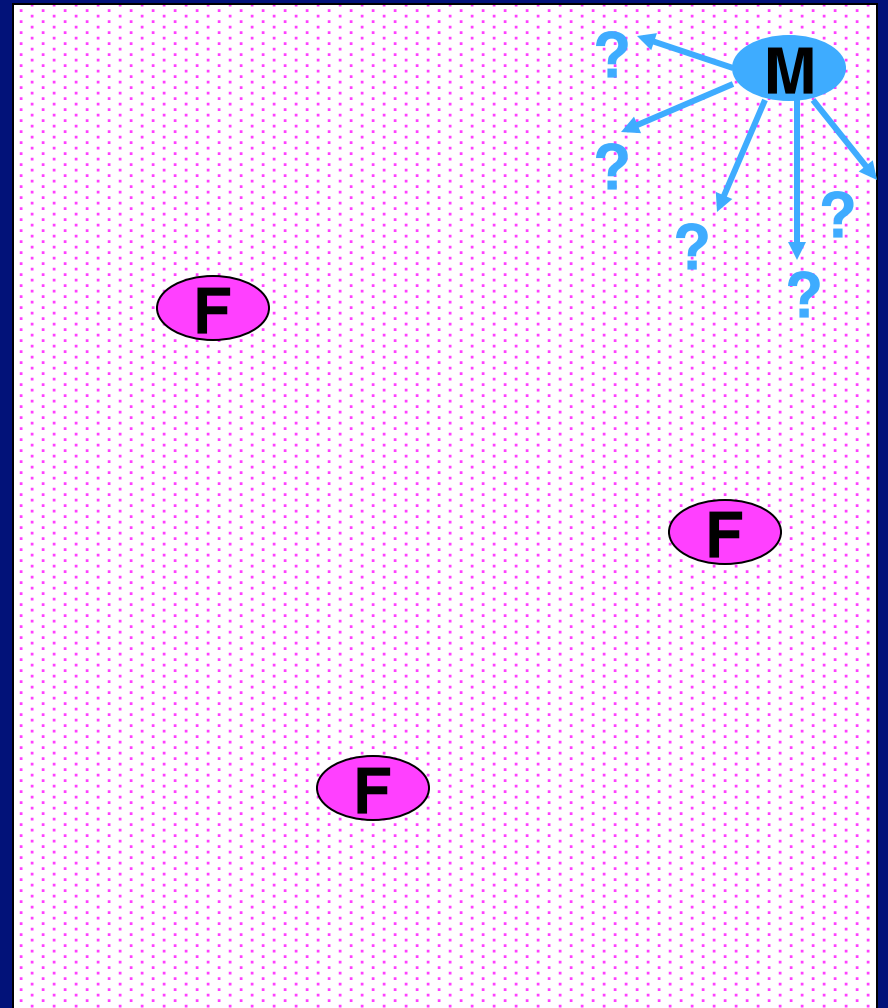
# Behavioral control of borers

- **Mating disruption strategy**
- **Use pheromones but not in traps**
- **Best used in large areas (>5A)**
- **'Isomate' products since 2000**

# Normal mating



# Mating disruption



# Behavioral control of borers

**Two products:**

- **Isomate-P**
- **Isomate-LPTB**

# Behavioral control of borers

- **Isomate-P**
  - **Controls peachtree borer**
- **Isomate-LPTB**
  - **Controls peachtree borer AND lesser peachtree borer**
- **Dispensers look like twist-ties; place manually in trees**
- **Made by Pacific Biocontrol Corp.**
- **Available via Great Lakes IPM**





# Isomate-LPTB

- 100-250 dispensers per acre
- Sold in pack of 500 dispensers
- Recommend **225 dispensers / A**
- Attach at shoulder height
- Apply in **early May**
- Effective for **100-120 days**
- cost: \$73/A @ 225 dispensers/A

# Isomate-P

- Use if only PTB is problem
- 100-250 dispensers per acre
- Sold in pack of 500 dispensers
- Recommend **100 dispensers / A**
- Apply in **early June**
- Effective for **100-120 days**
- cost: \$45/A @ 100 dispensers/A

# Comparison of Tactics

	<b>Chemical trunk drench</b>	<b>Pheromone mating disruption</b>
<b>Pros</b>	<ul style="list-style-type: none"><li>• Suitable for small blocks</li></ul>	<ul style="list-style-type: none"><li>• Single appl. lasts &gt;100 days</li></ul>
<b>Cons</b>	<ul style="list-style-type: none"><li>• Coverage difficult</li><li>• PHI challenge</li><li>• &gt;1 appl.</li></ul>	<ul style="list-style-type: none"><li>• Not for small blocks</li><li>• Must know which species targeted</li></ul>

