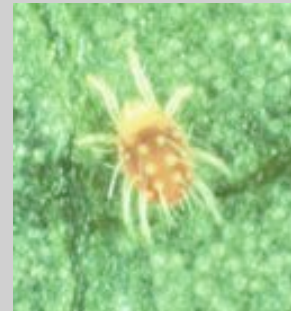


Tree Fruit Pest & Insecticide Update



Celeste Welty
January 2009

Tree Fruit Insect News

- **Product news**
- **New pest alert**
- **Research results**

New insecticides with new active ingredients

- **Movento 2SC (group 23)**
 - **Fully systemic**
 - **Sucking pests**
 - ⊙ **Aphids including woolies**
 - ⊙ **Pear psylla**
 - ⊙ **San Jose scale**

New insecticides with new active ingredients

- **Altacor 35WDG (group 28)**
- **Belt 4SC (group 28)**

New products in group 28

<i>Product</i>	<i>A.I.</i>	<i>Crops</i>	<i>Pests</i>	<i>Application</i>
Altacor	chlorantra- niliprole (Rynaxypyr)	fruit, potato	caterpillars, Col. potato beetle	foliar
Coragen	chlorantra- niliprole (Rynaxypyr)	veg	caterpillars, Col. potato beetle, leafminers	foliar or drip irrigation
Belt	flubendiamide	fruit, sweet corn	caterpillars	foliar or overhead irrigation
Synapse	flubendiamide	veg	caterpillars	foliar or overhead irrigation

Target pests

	Altacor	Belt
Codling moth	√	√
Leafrollers	√	√
Oriental fruit moth	√	

Altacor

- Toxic to neonate larvae & eggs
- Works best if ingested
- Must use 100+ gal water/A
- Adjuvants:
 - Pome fruit: 14 day PHI but do not use with adjuvant within 60 days of harvest
 - Stone fruit: do not use adjuvant with sweet cherry or tart cherry

New insecticides: pre-mixes of old + new a.i.s (price advantage??)

- **Voliam Flexi**
- **Leverage**

New pre-mixes

<i>Product</i>	<i>a.i.s</i>	<i>target</i>
Voliam Flexi	thiamethoxam (Actara) +	sucking pests
	chlorantraniliprole (Altacor)	caterpillars
Leverage	cyfluthrin (Baythroid) +	sucking pests
	imidacloprid (Provado)	broad spectrum

New insecticides/miticides with old a.i.s

- **Onager (= Savey)**
- **Portal (= Fujimite)**

New pest alert: Brown marmorated stink bug



- In PA since 2001
- Now in NJ, MD, DE, VA, WV, NY
- Pest in Japan, China, Korea
- Attacks fruits & seed pods
- Nuisance : invades homes for winter
- 1st report in Ohio: Nov. 2007
- New OSU fact sheet: FS-3824-08

Hosts of Brown Marmorated Stink Bug

- **Fruit crop hosts:**
 - Peach, apple, pear, cherry, Asian pear
 - Raspberries, grapes, currants
- **Vegetable crops**
 - Green beans
 - Peppers
 - Asparagus
- **Agronomic crops**
 - Soybean
 - Corn



Brown marmorated stink bug



nymph

- Both adults & nymphs feed on plants
 - Fruit
 - Leaves



Brown marmorated stink bug

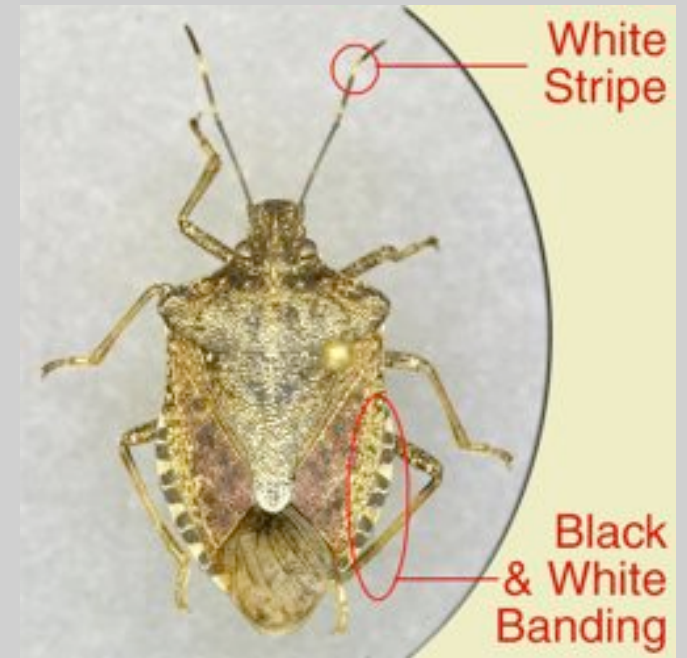
- Identify by white bands on antennae & sides



top view



bottom view



Research results, 2008

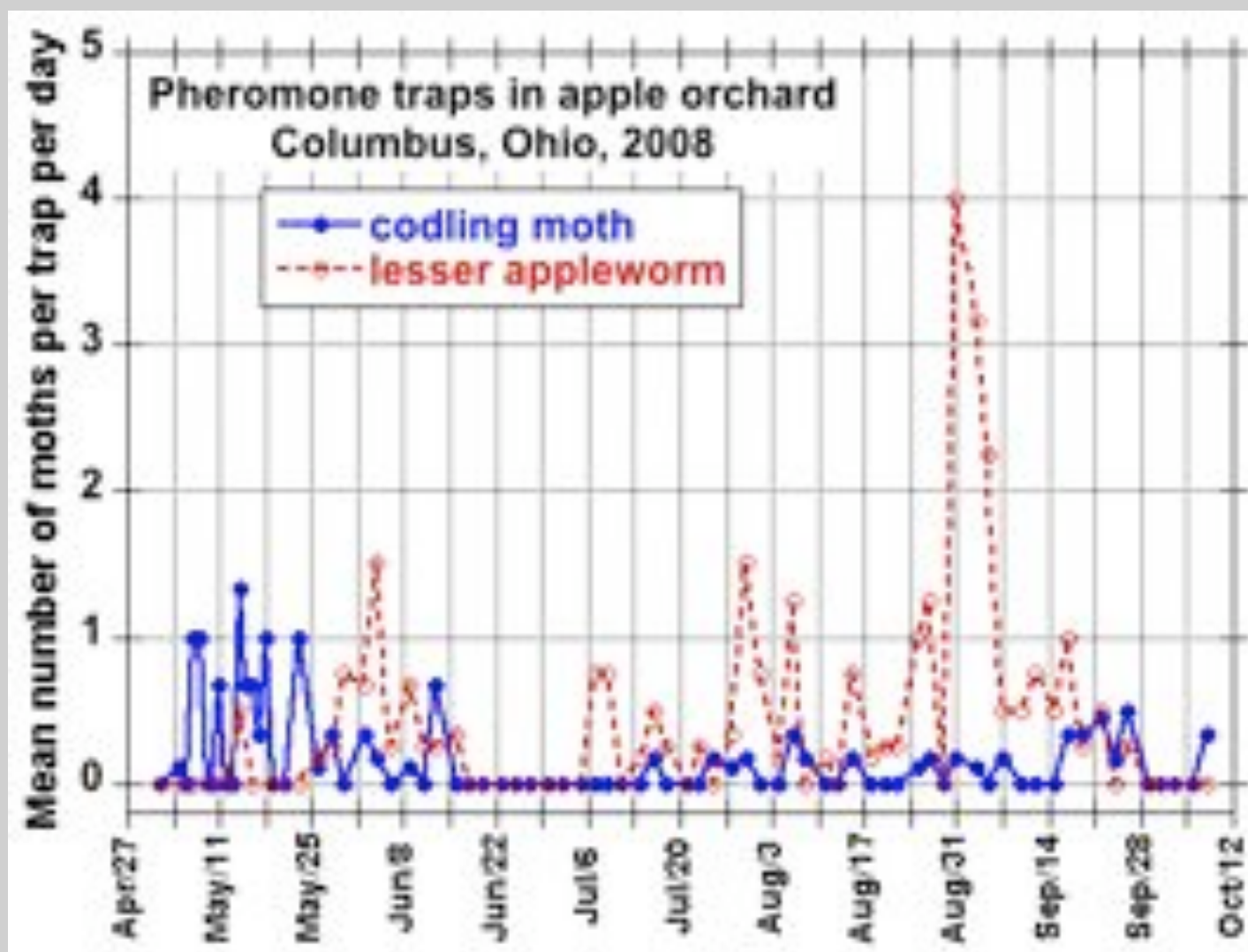
- Apples, codling moth
 - insecticides
 - virus
- Apples, mites

Codling moth insecticide trial, 2008



- **Need alternatives to O.P.s due to resistance**
- **Codling moth population lower than normal in 2008 (due to crash in 2007 from lack of food after Easter freeze)**

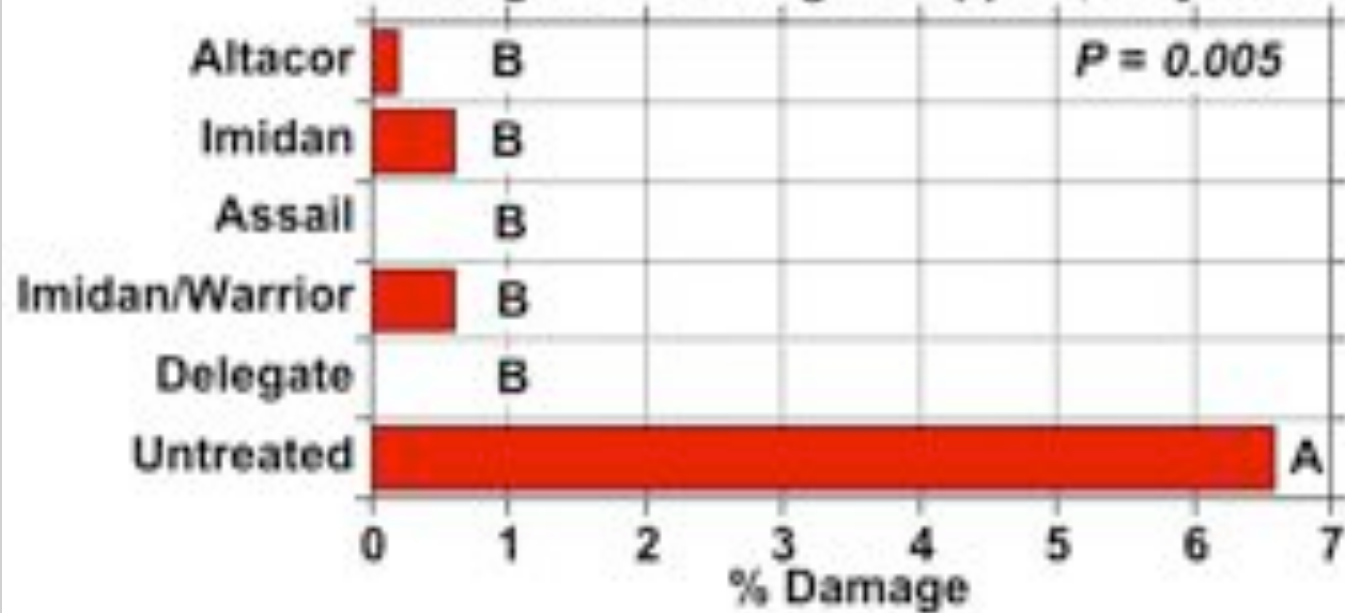
Codling moth in traps 2008

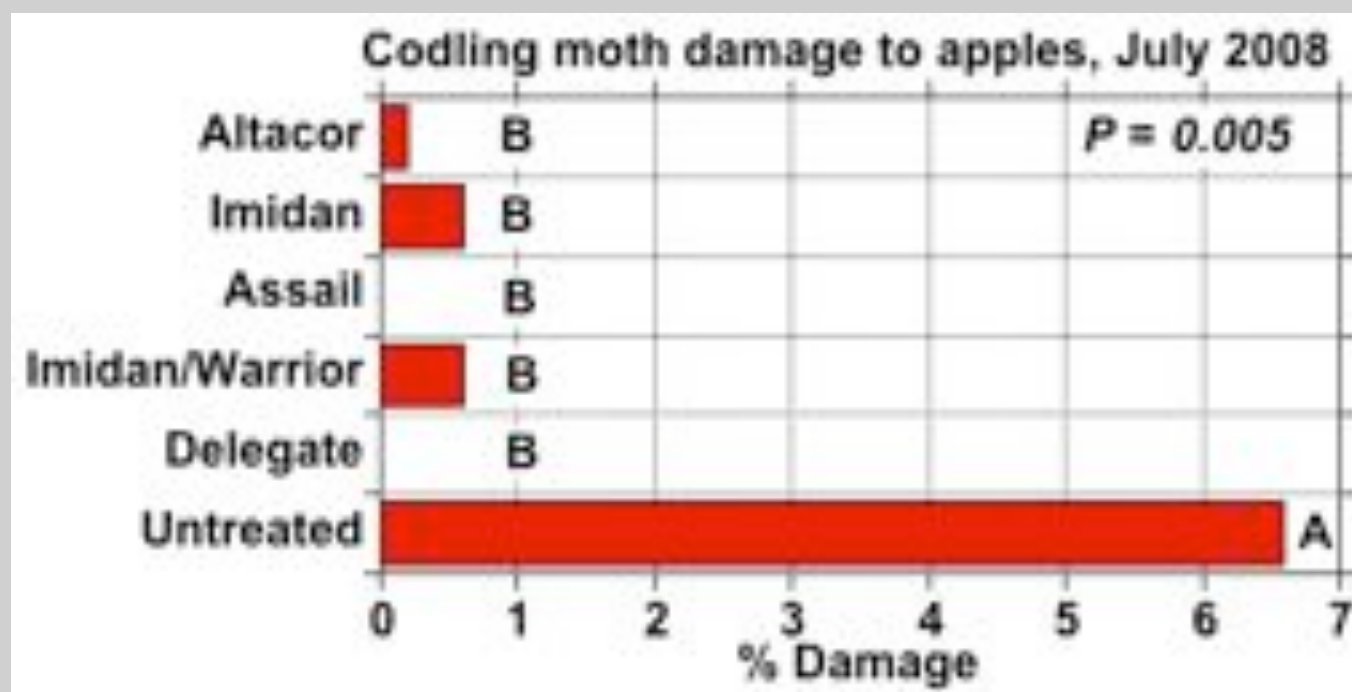


Treatments in codling moth efficacy trial 2008

	<i>1st generation</i>	<i>2nd generation</i>
1	Delegate	Delegate
2	Altacor	Altacor
3	Assail	Assail
4	Imidan	Imidan
5	Imidan	Warrior
6	untreated	untreated

Codling moth damage to apples, July 2008





Codling moth control



- **Newly registered a.i.s excellent:**
 - **Altacor**
 - **Delegate**
 - **(& Belt, not in trial)**

Codling moth virus trial, 2008

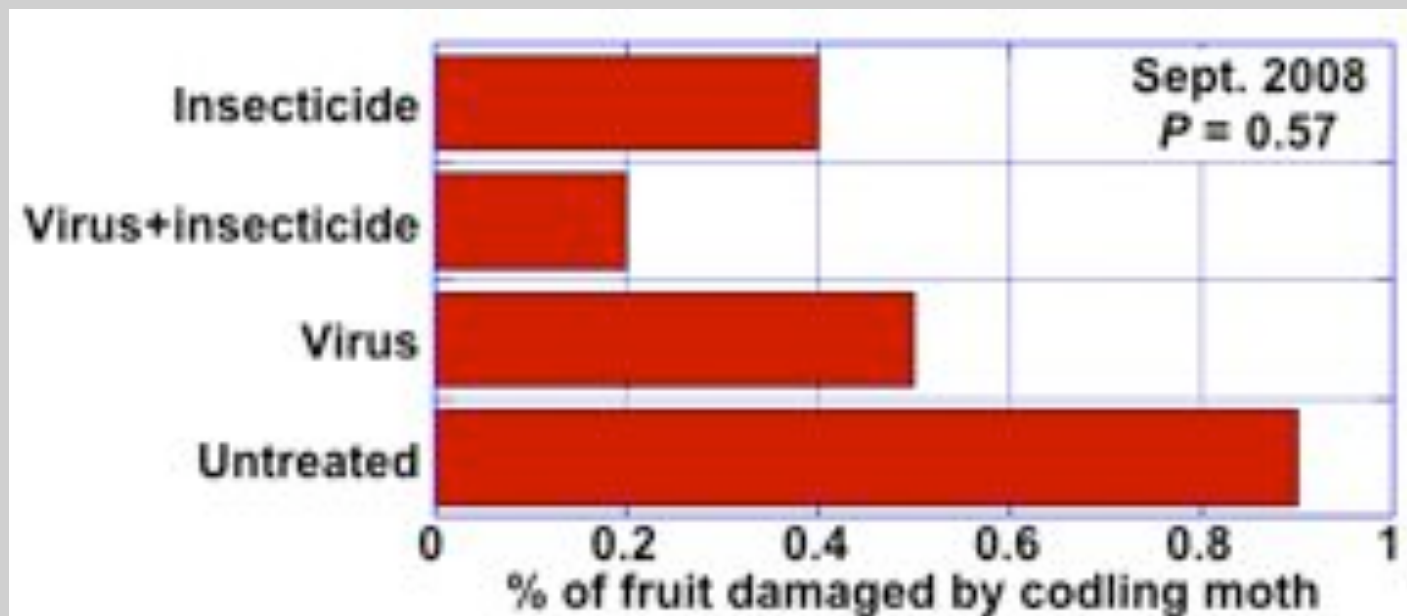
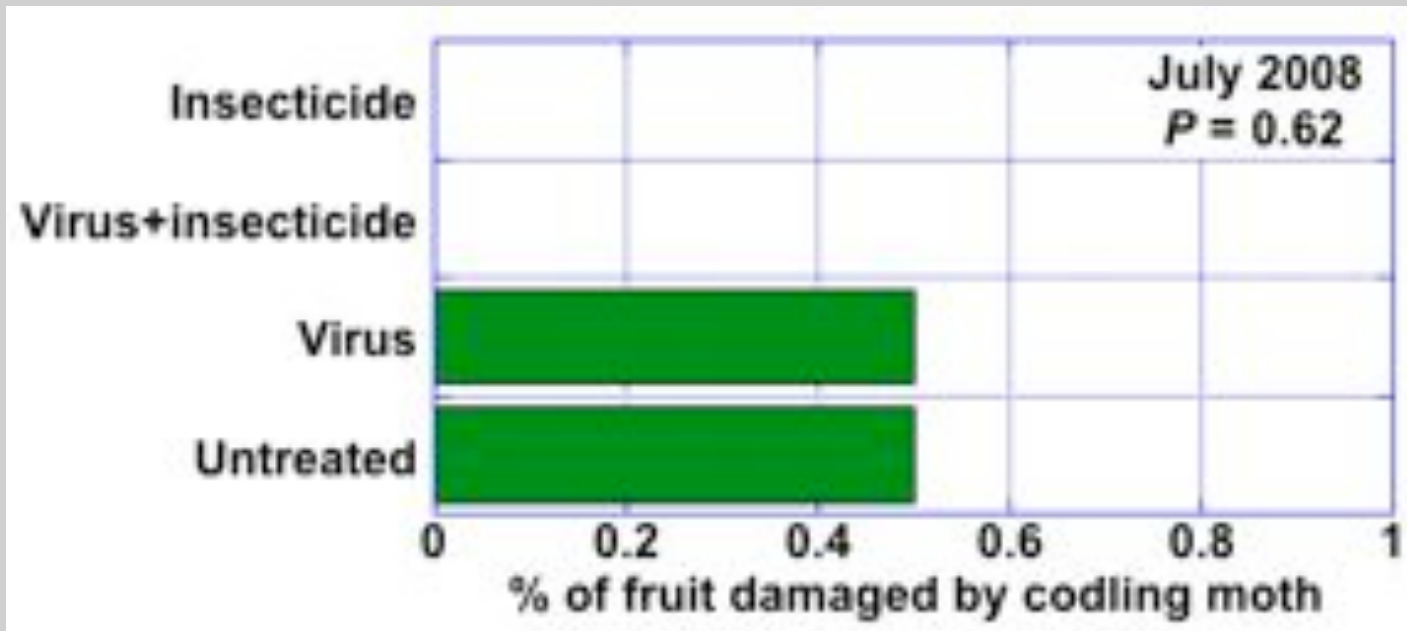


- Repeat of trial done in 2006
- Treatments:
 - Insecticide alone (Warrior)
 - Virus alone (Cyd-X)
 - Insecticide + Virus
 - Untreated

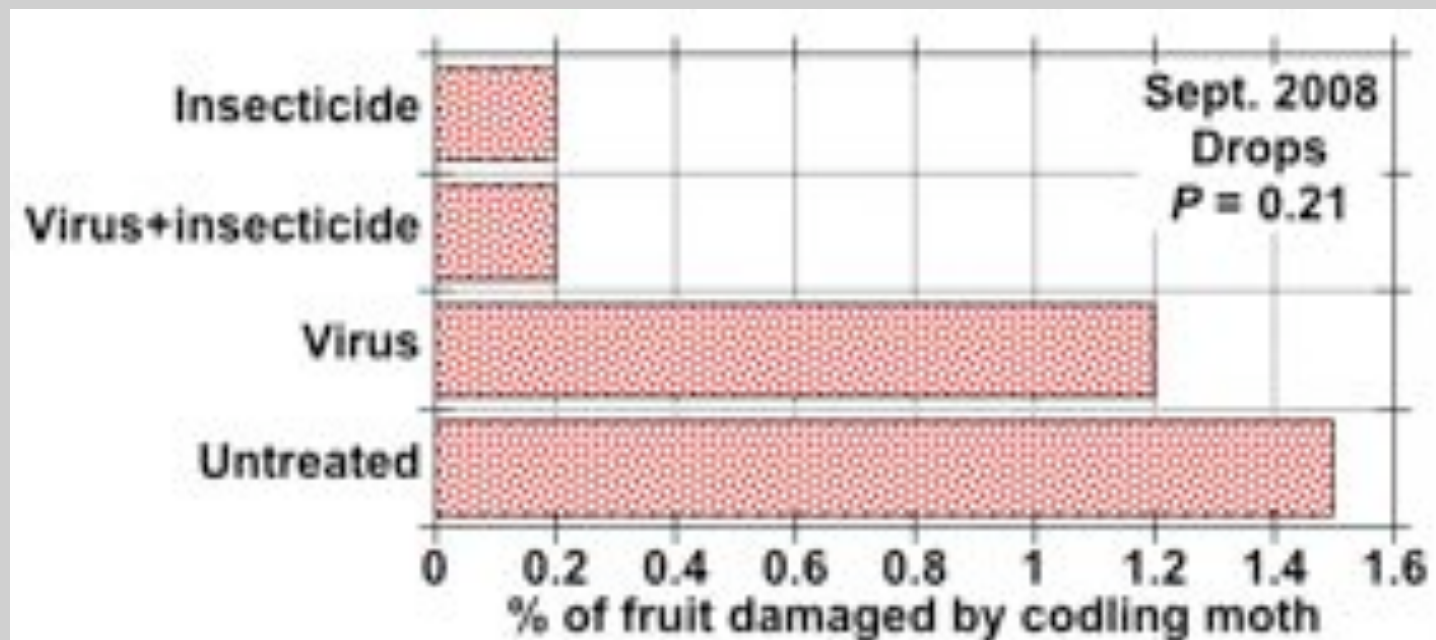
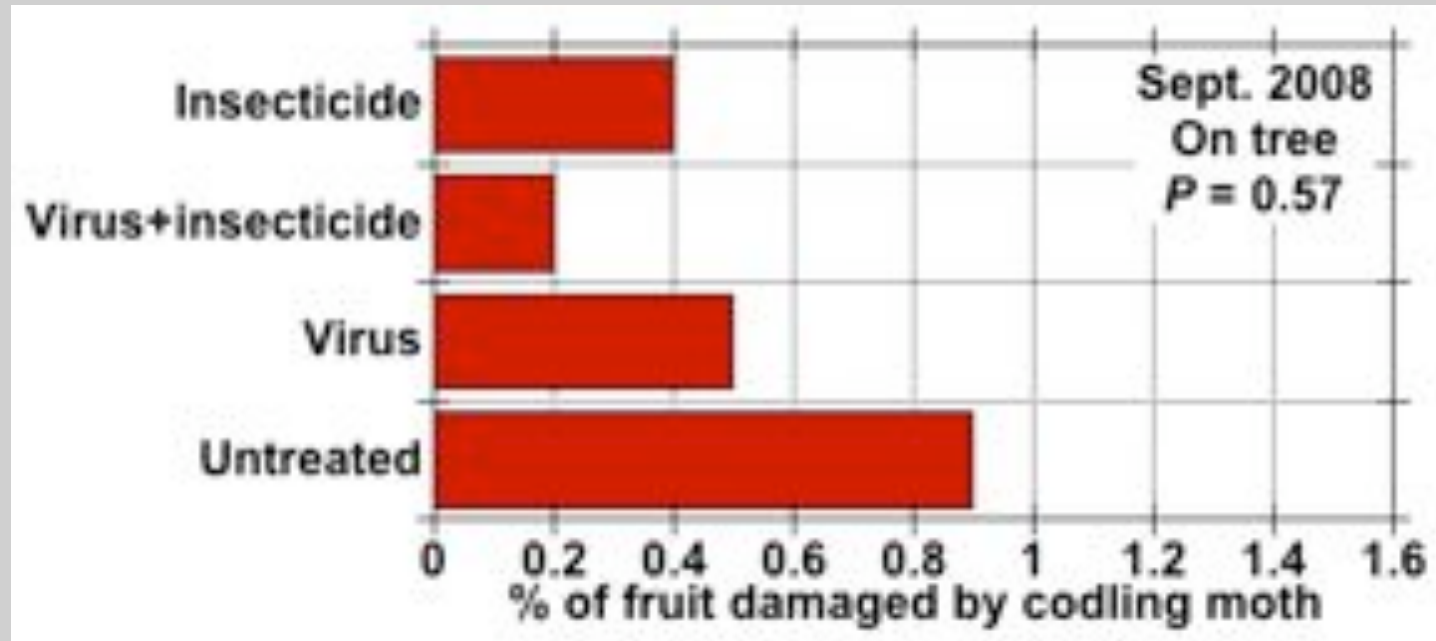
Frequency of treatments in virus trial

<i>Treatment</i>	<i>1st generation</i>				<i>2nd generation</i>			
	<i>1C</i>		<i>2C</i>		<i>5C</i>		<i>6C</i>	
Insecticide (14 day)	✓		✓		✓		✓	
Virus (7 day)	✓	✓	✓	✓	✓	✓	✓	✓

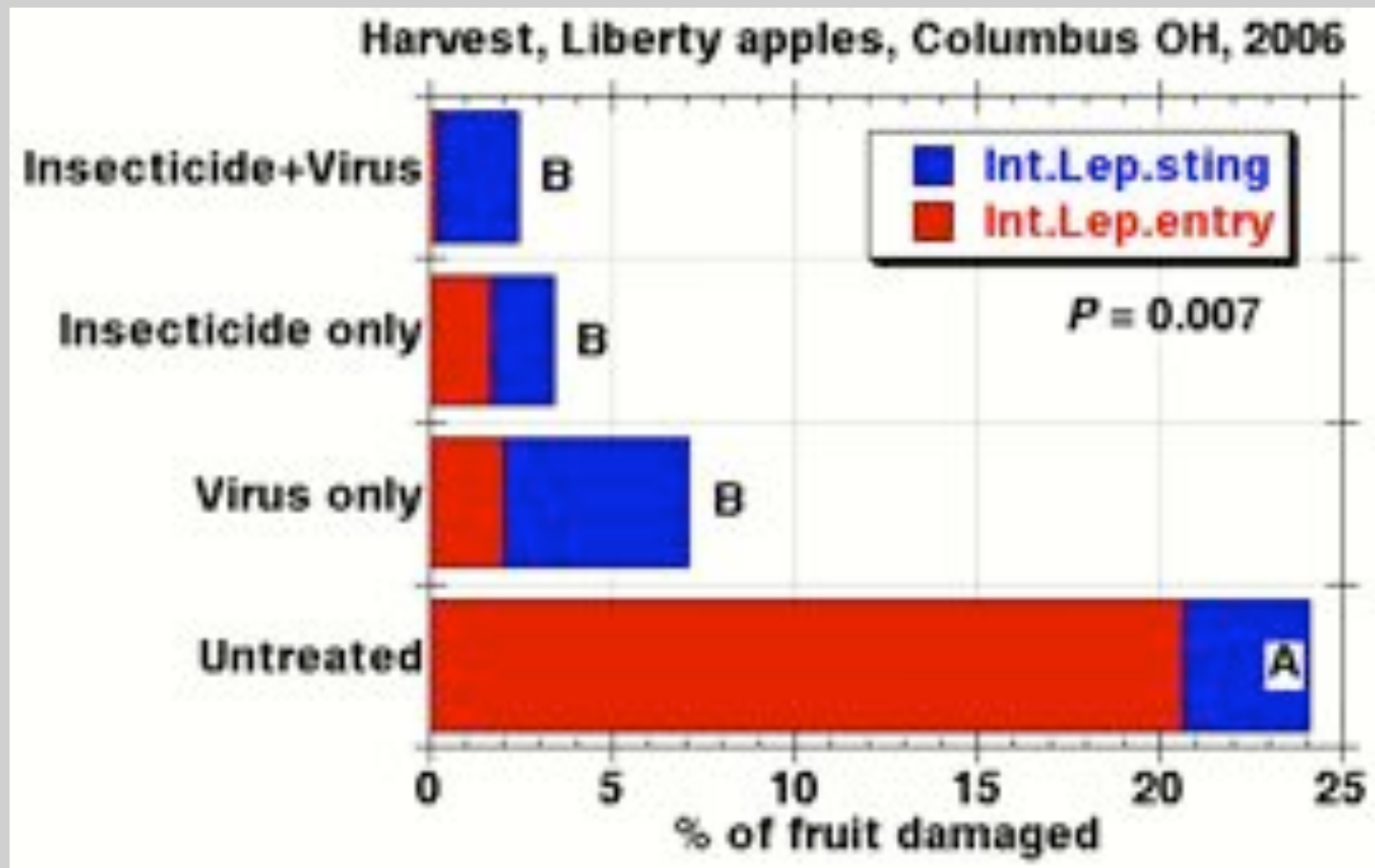
Virus results



Virus results



Compare with virus results 2006

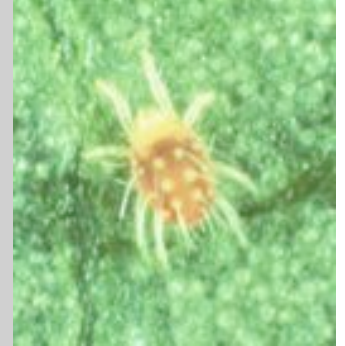
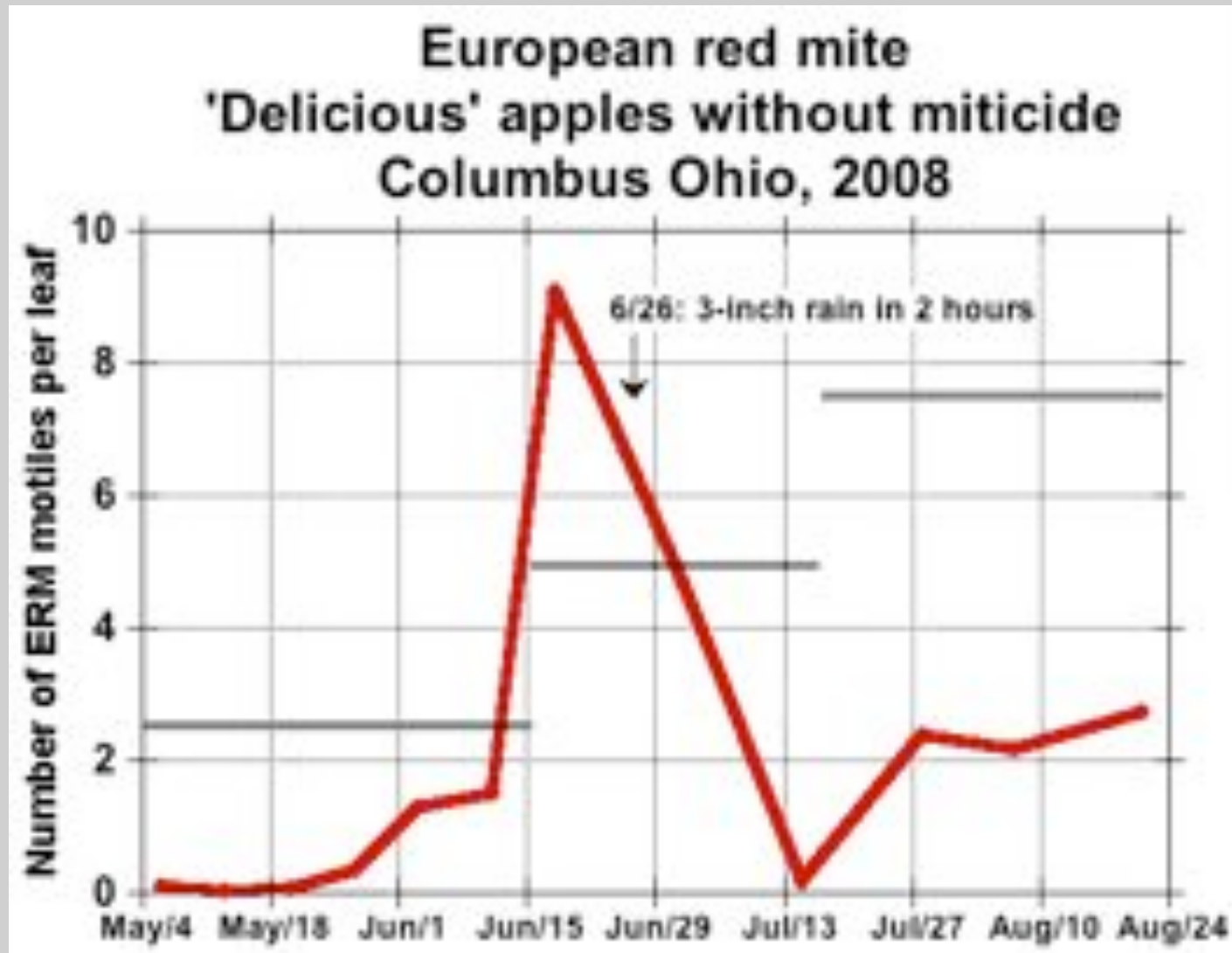




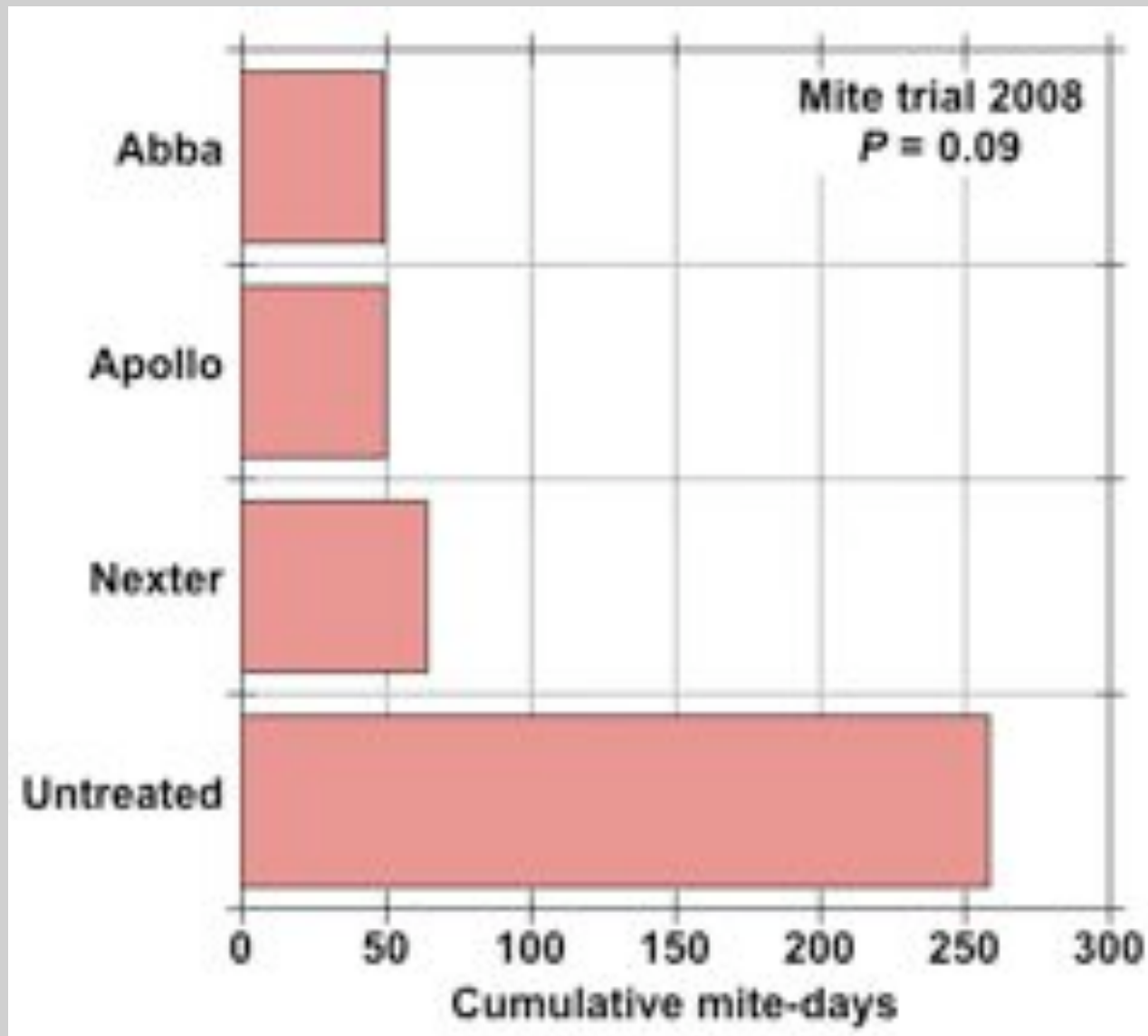
Mite trial, 2008

- **Treatments:**
 - **Abba (=Agri-Mek)**
 - **Apollo**
 - **Nexter**
 - **untreated**
- **Timing: 30 May (egg hatch)**

Mite results: seasonal trends



Mite results: cumulative mite-days



Got orchard with wormy fruit?



- **Common observations**
 - Large number of moths caught in trap
 - Increasingly wormy fruit at harvest
 - **Spray program:**
 - ◉ Only Imidan or Guthion used
 - ◉ Only 2 sprays per generation
 - ◉ Low gallonage (<50 gpa)
 - ◉ Early halt to spray program in August
 - **Species usually is codling moth**

Got orchard with wormy fruit?

- **What to do?**
 - **Verify species (CM or OFM?)**
 - **Modify sprays for codling moth**
 - ◉ **Improve timing**
 - ◉ **Use 3 sprays per generation**
 - ◉ **Increase water (50-100 gpa)**
 - ◉ **Change to new insecticide**
 - **If OFM found, modify timing**

Insecticides for apple (PA, NJ, MI)

<i>Pest</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>
Both CM & OFM	Rimon Altacor Belt Delegate <i>Guthion</i> *	Avaunt Calypso <i>Imidan</i> * Intrepid Lannate	Clutch Proclaim SpinTor Surround
CM	virus	Assail pyrethroids**	Esteem Sevin
OFM	Assail pyrethroids**	Esteem Lorsban Sevin	-

**if population is not resistant*

***pyrethroids: Asana, Baythroid, Danitol, Decis, Proaxis, Mustang, Warrior*

The End