



Key Decisions for 2011

- What blocks may be at most risk?
- When to time pesticide applications?
- What products, rate and application type to use?
- How to ensure control of other pests?
- How to scout/monitor?



Key Considerations: BMSB Biology

- Feeds on many plants/crops
- Present throughout the season
- Reproduction can occur in orchards
- Nymphs also feed on fruit
- Adults are strong fliers, routinely moving between habitats
- Anecdotal reports of large numbers of bugs in orchards at night



Key Considerations: Injury and Scouting

- More injury on border rows
- Anecdotal reports of more injury in tree tops
- Gummosis and dimpling in peach starting end of May
- Peaches show internal injury not visible on surface



Key Considerations: Injury and Scouting

- Depressions in apple by mid-June
- Discolored depressions by late June
- Likely variety dependent
- Extensive injury possible in Sept-Oct
- Some injury not detected at harvest, but expressed in cold storage



Key Considerations: Management

- Assume season-long vulnerability
- Nymphs more susceptible than adults
- Blocks near other hosts may be at elevated risk, especially along adjacent borders
- Potential for re-invasion of treated orchards



Key Considerations: Management

- Some products for BMSB are highly disruptive to IPM
- Some have short residual activity
- Some of the strongest products are not registered for apples or peaches or have significant use restrictions
- Some products for BMSB do not necessarily have the best fit for other key pests


Main unresolved questions

- Relative effectiveness of complete vs ARM sprays?
- Required rates of strongest products?
- Managing BMSB without flaring other pests? (e.g. mites, SJS, WAA)
- Will some varieties/blocks require more aggressive intervention?
- Relationship between BMSB numbers and injury?

Strategies/tactics to consider

- Pre-bloom mite and SJS management
- Mating disruption for CM and OFM
- Killing/repelling adults will be paramount
- ARM vs complete spray applications?
(perhaps conduct your own experiment?)
- Regular injury and bug scouting
- Monitor with traps?
- Spray in the evening or at night?
- Surround as a repellent?


The Apple Toolbox



Trade Name	Active Ingredient	Lethality Index
Thionex	endosulfan	90.4
Lannate	methomyl	90.1
Guthion	azinphosmethyl	71.3
Danitol	fenpropathrin	66.7
Actara	thiamethoxam	56.3
Belay	clothianidin	55.6
Baythroid	beta-cyfluthrin	54.8
Proaxis, Declare	gamma-cyhalothrin	53.8
Warrior, Lambda-Cy	lambda-cyhalothrin	52.9
Mustang Max	zeta-Cypermethrin	52.1

Products in **RED** are highly disruptive to biological control and IPM!

The Peach Toolbox



Trade Name	Active Ingredient	Lethality Index
Malathion	malathion	92.5
Thionex	endosulfan	90.4
Lannate	methomyl	90.1
Ambush, Pounce, etc.	permethrin	77.1
Danitol	fenpropathrin	66.7
Actara	thiamethoxam	56.3
Belay	clothianidin	55.6
Baythroid	beta-cyfluthrin	54.8
Proaxis, Declare	gamma-cyhalothrin	53.8
Warrior, Lambda-Cy	lambda-cyhalothrin	52.9
Mustang Max	zeta-Cypermethrin	52.1

Fewer secondary pest problems in peaches following **RED** products, but still a concern

Characteristics of Individual Products will Influence Programs

- **Thionex EC and WP**

To be phased out in peaches in 2012
and apples in 2015

REI = 7 d (EC) and 20 d (WP)

In the past, use of EC formulation has
caused fruit finish and phytotoxicity issues
in **apples/pears**

Characteristics of Individual Products will Influence Programs

- **Lannate**

Very short residual will require tight application intervals (ARM? Complete?)

- **Guthion**

Will be phased out in 2012

- **Malathion**

Short residual and weak against other key peach pests (e.g. OFM)

Characteristics of Individual Products will Influence Programs

- **Surround (+ insecticide)**

Untested against BMSB in commercial orchards but may have promise as a repellent and to enhance uptake of insecticide

Not rain-fast under brief, heavy rain

May be opposition from packinghouses if residue at harvest

PEACH Products	L.I. (USDA)	Rate tested (USDA)	Label Restrictions					Notes
			App rate range/A	# apps¹	Max/A/ season	REI	PHI	
Malathion 5EC	92.5	6 pt	3-6 pt	?	14.4 pt	12 h	7 d	* labels vary
Thionex EC	90.4	1.67 qt*	1.67 – 3.33 qt	2	3.33 qt	7 d	30 d	* 1/2 rate
Lannate SP	90.1	1 lb	1 lb	6	6 lb	4 d*	4 d*	* same for LV
Ambush 3.2EC	77.1	16 fl oz*	4 – 12 fl oz	5	60 fl oz	12 h	14 d	* maximum <u>apple</u> rate
Danitol	66.7	10.67 & 18 fl oz	10.6 – 21.3 fl oz	3	42.6 fl oz	24 h	3 d	
Actara	56.3	4.5 oz	2 – 5.5 oz	2	11.0 oz	12 h	14 d	
Belay	55.6	3.2 oz* (Clutch)	4 – 12 fl oz	2	12 fl oz	12 h	21 d	* half rate of Clutch
Baythroid XL	54.8	2.6 fl oz	1.4 – 2.8 fl oz	2	5.6 fl oz	12 h	7 d	
Warrior	52.9	5.12 fl oz	2.56 – 5.12 fl oz	4	20.48*	24 h	14 d	* after bloom
Mustang Max	52.1	4 fl oz	1.28 – 4 fl oz	6	24 fl oz	12 h	14 d	
Tombstone	49.0	2.6 fl oz	1.4 – 2.8 fl oz	2	5.6 fl oz	12 h	7 d	

¹ Based on rate tested by USDA ARS or highest label rate for crop

APPLE Products	L.I. (USDA)	Rate tested (USDA)	Label Restrictions					Notes
			App rate range/A	# apps ¹	Max/A/season	REI	PHI	
Thionex WP	90.4 (EC)	1.67 qt* (EC)	4 lb (50WP)	2	4.0 lb (50WP)	20 d* (WP)	21 d	* 1/2 rate EC
Lannate SP	90.1	1 lb	1 lb	5	5 lb	3 d*	14 d*	* same for LV
Guthion	71.3	3 lb	2-3 lb	1	3 lb	14 d	14 d	
Danitol	66.7	10.67 & 18 fl oz	10.6 – 21.3 fl oz	3	42.6 fl oz	24 h	14 d	
Surround + Actara	66.7	12.5 lb 4.5 oz	25 – 100 lb 2 – 5.5 oz	NA	*	*	NA	* based on insecticide
Actara	56.3	4.5 oz	2 – 5.5 oz	2	11.0 oz	12 h	35 d*	* > 2.75 oz
Belay	55.6	3.2 oz* (Clutch)	4 – 12 fl oz	2	12 fl oz	12 h	7 d	* half rate of Clutch
Baythroid XL	54.8	2.6 fl oz	1.4 – 2.8 fl oz	1	2.8 fl oz	12 h	7 d	
Warrior	52.9	5.12 fl oz	2.56 – 5.12 fl oz	4	20.48*	24 h	21 d	* after bloom
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