

Red Tomato Eco Apple Project
Brown Marmorated Stink Bug (BMSB) Management Guidelines for 2011
Use in conjunction with Eco Apple Protocol and Quick Guide
DRAFT 5/24/2011

BMSB risk-assessment

Low-risk: Orchard blocks with no previous history of BMSB damage and no presence of feeding damage. If BMSB feeding injury to fruit is found, status may be increased to 'moderate risk'.

Moderate-risk: Block without history of BMSB injury but with confirmed BMSB feeding injury to fruit at or after third cover likely to result in economic losses greater than the cost of control.

High-risk: Block has a history of confirmed season-long feeding injury to fruit, or history of late-season feeding injury and BMSB feeding injury to fruit before third cover likely to result in economic losses greater than the cost of control.

BMSB scouting: All insecticide applications are based on presence of fresh BMSB feeding injury to fruit, i.e., do not continue applications if BMSB feeding injury to fruit is no longer occurring at levels likely to result in economic losses greater than the cost of control.

New York growers please note: The following products have important label restrictions in New York: Actara (thiamethoxam), Danitol (fenpropathrin), Thionex (endosulfan), Lannate (methomyl). Belay and Clutch (clothianidin) are not registered for use in NY.

Note: An additional neonicotinoid product Stinger/Venom (dinotefuran) is pending EPA Section 18 approval and may become available during the 2011 season. If approved, the IPM Institute will contact growers and provide an additional revision.

Note: Even if grower does not anticipate marketing fruit to processors at this point, processor-restrictions on use of kaolin and endosulfan should be carefully considered given the potential for BMSB injury to downgrade fruit to juice quality only.

Product information for BMSB management

Actara (thiamethoxam) or Actara plus Surround (kaolin)* – 'Use with Restrictions'

- a. Allowed for use in moderate and high-risk blocks.
- b. Actara used alone without Surround has a low efficacy rating for BMSB.
- c. Up to three applications of Actara allowed at full label rate. **(Actara is not currently labeled for BMSB in NY, although if applied for other pests it may provide some level of BMSB control. Only two applications of Actara are allowed for New York growers. Please see additional restrictions for NY on product label.)**
- d. 12-hour re-entry interval (REI), 10-day interval between applications and 35-day pre-harvest interval (PHI).
- e. Actara may also provide control of control plum curculio and rosy apple aphid.
- f. Kaolin may result in visible residue on fruit at harvest.

- g. Growers should not expose more than one generation of multi-generation pests (e.g., codling moth, oriental fruit moth) to materials in this class, which includes Actara, to avoid promoting the development of resistance.
- h. When Actara and other neonicotinoid insecticides (Assail, Calypso, Belay/Clutch), except imidacloprid (Provado), are used to treat other pests, growers may expect to have some contact efficacy on BMSB in orchard at time of application.
- i. ***Some processors may not accept fruit treated with Surround residuals present on fruit and applications of Surround are not recommended if grower anticipates selling fruit to processors.**

Belay and Clutch (clothianidin)* – ‘Use with Restrictions’

- a. Allowed for use for moderate and high-risk blocks.
- b. Up to one application allowed at full label rate.
- c. 12-hour REI, 7-day PHI. Total active ingredient allowed per acre is 0.2 lbs of clothianidin regardless of product formulation or trade name.
- d. Belay/Clutch may provide control for apple maggot, plum curculio, aphids and provide suppression for Oriental fruit moth.
- e. When Belay/Clutch and other neonicotinoid insecticides (Assail, Calypso, Actara), except imidacloprid (Provado), are used to treat other pests growers may expect to have some contact efficacy on BMSB in orchard at time of application.
- f. ***Belay and Clutch are not registered for use in NY.**

Danitol 2.4 EC (fenpropathrin), RESTRICTED USE PESTICIDE, ‘Use with Restrictions’ for BMSB only.

- a. Allowed for use in moderate-risk blocks for late-season BMSB control on late-harvested varieties only after the maximum number of applications of Actara and Belay/Cutch have been made.
- b. Allowed for use in high-risk blocks after third cover.
- c. Up to two applications allowed.
- d. 24-hour REI, see label for REI for field scouts two to eight days after application, ten-day interval between applications and 14-day PHI.
- e. Danitol may provide control for apple maggot, plum curculio, codling moth, Oriental fruit moth, obliquebanded and redbanded leafrollers.
- f. Use of Danitol is likely to eliminate or greatly reduce effectiveness of bio-control for mites and other pests.
- g. ***See additional restrictions for NY growers on product label.**

Baythroid XL (beta-cyfluthrin), RESTRICTED USE PESTICIDE, ‘Use with Restrictions’ for BMSB only.

- a. Allowed for use in moderate-risk blocks for late-season BMSB control on late-harvested varieties only after the maximum number of applications of Actara and Belay/Cutch have been made.
- b. Use in high-risk blocks after third cover.
- c. 7-day PHI.
- d. One application allowed at maximum label rate.
- e. 12-hour REI.

- f. Use of Baythroid XL is likely to eliminate or greatly reduce effectiveness of bio-control for mites and other pests.

Warrior or Warrior II (lambda-cyhalothrin) RESTRICTED USE PESTICIDE, 'Use with Restrictions' for BMSB only.

- a. Allowed for use in moderate-risk blocks for late-season BMSB control on late-harvested varieties or after the maximum number of applications of Actara and Belay/Cutch have been made.
- b. Use in high-risk blocks after third cover.
- c. 21-day PHI.
- d. Up to four applications allowed per season at a minimum of 5-day intervals.
- e. 24-hour REI.
- f. Use of Warrior formulations is likely to eliminate or greatly reduce effectiveness of bio-control for mites and other pests.

Thionex 50W (endosulfan)*, RESTRICTED USE PESTICIDE, 'Use with Restrictions' for BMSB only.

- a. Allowed for use in moderate-risk blocks for late-season BMSB control on late-harvested varieties only after the maximum number of applications of Actara and Belay/Cutch have been made.
- b. Use in high-risk blocks after third cover.
- c. Up to two applications allowed.
- d. 20-day REI (See label for special PPE for early re-entry), ten-day interval between applications and 21-day PHI. EPA phase-out by 2015.
- e. Use of Thionex EC not recommended because of uncertain impacts on fruit finish.
- f. Thionex may provide control for obliquebanded and redbanded leafrollers, wooly apple aphid and other aphids.
- g. Use of Thionex is likely to eliminate or greatly reduce effectiveness of bio-controls for mites and other pests.
- h. *** Thionex not labeled for stink bugs in NY. Some processors may not accept fruit treated with endosulfan because of label restrictions which prevent pomace from being used as a livestock feed. Even if marketing fruit to processors is not anticipated, if BMSB damage occurs, juice may be the only market.**

Lannate LV and Lannate SP (methomyl)*

- a. Allowed for use in moderate-risk blocks for late-season BMSB control on late-harvested varieties only after the maximum number of applications of Actara and Belay/Cutch have been made.
- b. Allowed for use in high-risk blocks after third cover.
- c. Up to five applications allowed per season.
- d. 3-day REI, 7-day interval between applications and 14-day PHI.
- e. Lannate may provide control for apple aphid, rosy apple aphid, tufted apple budmoth, green fruitworm, tarnished plant bug, codling moth, leafrollers, lesser appleworm, white apple leafhopper and spotted tentiform leafminer.
- f. Do not apply to early Macintosh and Wealthy varieties.

- g. Use of Lannate formulations is likely to eliminate or greatly reduce effectiveness of bio-controls for mites and other pests.
- h. Lannate is known to have only seven days of residual control for many orchard pests and may provide a similar length of effective residual for BMSB.
- i. ***Lannate LV and SP formulations have section 2(ee) registration for NY for BMSB.**