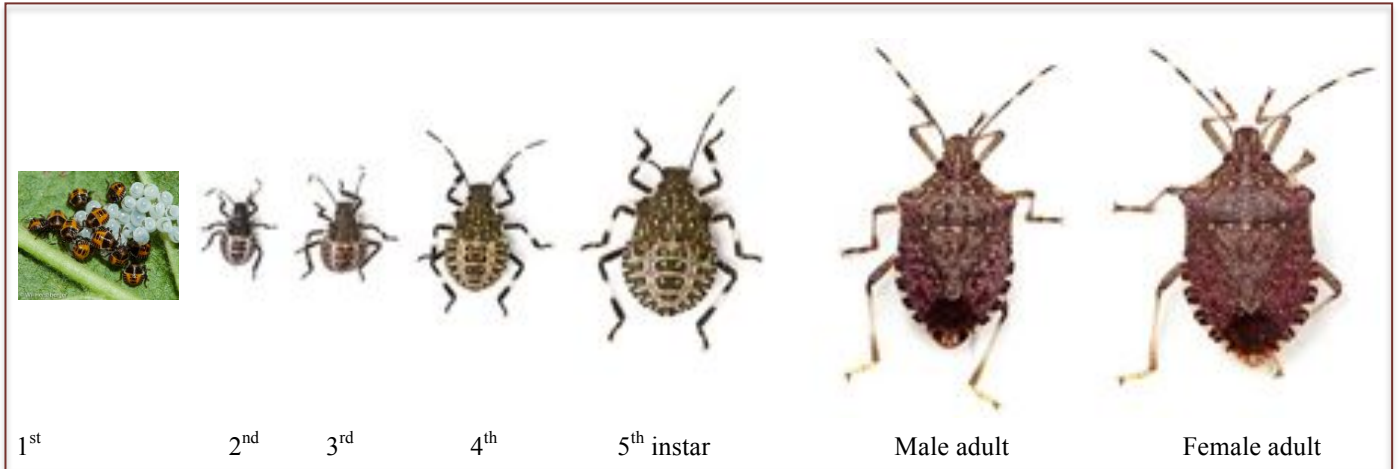


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● Agricultural Research and Extension on Tree Fruits, Grape and Vegetables ●

**Increasing signs of feeding injury from the stink bug complex observed on late season varieties including Red Delicious, Gala, Fuji and Golden Delicious in the Mid- Hudson Valley.
September 18, 2014**



Life Stages of the brown marmorated stink bug



Images of more recent injury from the stink bug complex (left image) and earlier seasonal feeding injury (right image) to Golden Delicious apple. September 26, 2012

Over the past two weeks we have been seeing an increase in feeding injury from the invasive brown marmorated stink bug on red and yellow colored varieties. As injury does not express itself immediately on the fruit, apple recently fed upon by the SB complex will likely be harvested and stored without blemish, only to find the same fruit with very

high levels of fruit damage after its removal from cold storage. Efforts should be made to manage this insect complex prior to harvest.

Trapping efforts throughout the Hudson Valley have documented the presence of brown marmorated stink bug since late April. However, its presence in border trees or even in traps has not, up until late August, been a sign of BMSB presence in orchards causing feeding damage. The BMSB has recently begun movement into orchards to intensively feed, stocking up on reserves needed to successfully overwinter. In orchards throughout the Hudson Valley we've captured what we would consider the 'Provisional Threshold' numbers of adult BMSB in pheromone trap captures over the course of the past two weeks. First threshold occurred on the 11th of September. Continued populations have been observed above the 10 adult per trap threshold, sprayed prior to trap reset with an effective insecticide.

Indications of stink bug presence can be observed in the presence of live SB in fruit clusters and harvested bins with examples of fruit injury of varieties remaining on the trees as is shown in the photos below. Control measures should be taken if this type of fruit injury is being observed. **Very few insecticides are very effective against this insect complex with regards to residual efficacy.** Those listed below are labeled for use against BMSB in NY and represent the best of university and USDA bioassay tested insecticides that will help to reduce the injury and increase mortality of the population. Consider using a non-ionic surfactant to increase penetration of the active ingredients. However, a tight schedule of no less than 7 days should be made if new fruit damage and stink bug adults continue.

Materials labeled for BMSB in NYS	SB Efficacy	Rates	PHI
Bifenthrin ² (Brigade WSB; Bifenture EC , 10DF)	***	2.6 - 12.8 fl. oz./A	14d PHI Pear Fruit
Cyfluthrin (Baythroid XL 1EC)	**	2.4 - 2.8 fl. oz./A	7d PHI Pome Fruit
Endosulfan (Thionex 50WP; 3EC)	***	4.0 lbs./A	21d PHI Pome Fruit
Esfenvalerate (Asana XL 0.66EC)	**	2.0 - 14.5 fl.oz./A	14d PHI Pome Fruit
Fenpropathrin (Danitol)	***	10 2/3 - 21 1/3 fl.oz./A	14d PHI Pome Fruit
Imidacloprid + Cyfluthrin (Leverage 360)	**/**	2.4 - 2.8 fl. oz./A	7d PHI Pome Fruit
Lambda-Cyhalothrin (Warrior ZC)	**/**	5 - 6 fl. oz./A	21d PHI Pome Fruit
Lambda-Cyhalothrin (Voliam Xpress EC) + Chlorantraniliprole	**/**	6 - 12 fl.oz./A	21d PHI Pome Fruit
Methomyl (Lannate LV) ¹	**/**	2.25 pts./A	14d PHI Pome Fruit
Thiamethoxam (Actara 25WDG)	**/**	4.5 - 5.5 fl.oz./A	35d PHI Pome Fruit
Thiamethoxam + Lambda-Cyhalothrin (Endigo ZC)	***	5 - 6 fl. oz./A	35d PHI Pome Fruit
Oxamyl (Vydate 2L) ¹	**	2.25 pts./A	14d PHI Pome Fruit

Read the label: The pesticide label is your guide to using pesticides safely and effectively. It contains pertinent information that you should read and understand before you use a pesticide product.

1. Methomyl and oxamyl will have excellent contact efficacy yet little to no residual activity when dry.
2. Bifenture use requires a Section 18 label for use on apple in Dutchess, Ulster and Orange Counties in 2014.

Leverage 360 (Class 3A & 4A) include the pre-mix insecticide active ingredients Imidacloprid (Class 4A) and Beta-Cyfluthrin (Class 3A) that act as both contact and feeding toxicants against the SB complex. Lannate (Class1) contains Methomyl, a carbamate and Danitol (Class 3A) Fenpropathrin, act as direct contact insecticides. Most of these materials have relatively short residual and require a 5-7 day program of alternating materials during BMSB migration into tree fruit.

Examples of four distinct types of damage we are seeing in Ulster & Orange, NY.



Red skin expression



Very recent feeding beginning to appear



Large dark green skin SB feeding expression with sunken lesions; caused by earlier feeding



Small dark green SB feeding expression

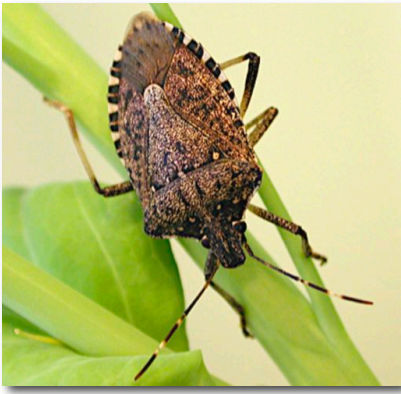


Dark green skin SB feeding expression close-up



Magnified image of feeding site.

Feeding site expression typical of stink bug as classified by Mark Brown¹: Feeding 'tubes', white crystalline sugar residue, very small hole in center of discolored sites and feeding sites with discoloration and depressions.



Brown marmorated stink bug, *Halyomorpha halys*



Green Stink bug, *Acrosternum hilare*

Reference:

1. Factors Affecting Appearance of Stink Bug (Hemiptera: Pentatomidae) Injury on Apple.
[Brown MW](#), [Short BD](#). [Environ Entomol](#). 2010 Feb;39(1):134-9.

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