



Timely Viticulture

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"Timely Vit" is designed to give those in the Maryland grape industry a timely reminder on procedures or topics they should be considering in the vineyard.

Brown Marmorated Stink Bug (BMSB)

Part 3 - Fruit Damage and Juice/Wine Taint

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The brown marmorated stink bug (BMSB) has become a state-wide problem in Maryland and Mid-Atlantic vineyards, and its range and damage is increasing. The full impact on vineyards and wine quality potential of this newly introduced pest is unclear. TimelyVit BMSB Part 1 gives background on the pest and TimelyVit BMSB Part 2 addresses management options. This TimelyVit BMSB Part 3 discusses fruit damage and the latest research on juice and wine taint during harvest, processing, and fermentation. Again it must be emphasized that this is a new "introduced" pest and very little is currently known of its management, thresholds for management.

BMSB as a vineyard pest

- Fruit and foliage should be monitored regularly for presence of eggs, all instars, and adults.
- All BMSB instars life stages (nymphs thru adult) have been found in vineyards.
- All instars have been found to be causing direct damage to grapes.
- All instars have been found to contain a distinct odor which can taint items it contacts.
 - The odor active compound is trans-2-decenal and possibly cis-2-decenal.
 - The compound smells like the fresh herb cilantro
- The insects have been found both in the foliage and the clusters, although those in the clusters are most important close to harvest.
- Stink bugs can cause direct injury to grapes by piercing and feeding on the berries.
- Injury caused by piercing and feeding on the berries can lead to increased susceptibility to Botrytis and other late season rots.
- Presence of the insects in the vineyard may be transient however you must maintain diligent monitoring.
- As the season progresses, harvest of other crops in your surrounding area (soybeans, corn, vegetables, fruit, etc.) may force migration, causing populations in your vineyard to increase very dramatically.



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Pre-Harvest Thru Post-Harvest

- BMSB may be present inside the clusters and transported in lugs to the winery.
 - The insects are seeking moisture, sugar, and warmth, and tend to “hide” inside cluster overnight.
 - Grapes are preferably harvested cool, so the insects may still be present in the fruit during harvest but may not be “active” and noticeable as they move more slowly when cool.
- Fruit should be sorted in the vineyard when harvesting to remove stink bugs prior to placing in the lug.
 - Sometimes shaking the wire or the cluster itself may help to disturb the insect inducing flight.
- **It is strongly recommended to sort fruit prior to crushing or de-stemming, removing additional stink bugs.**

BMSB “taint” in juice and wine

- Crushing stink bugs with the fruit could result in a stink bug odor or taint in the juice/must.
 - Research was conducted by the author to determine the threshold for taint in juice and wine.
 - 0, 2, 10, or 20 BMSB per 50 pounds of ‘Vidal Blanc’ fruit were directly added to the crusher/destemmer and then pressed and fermented.
 - 0, 2, 20, or 40 BMSB per 50 pounds of ‘Cabernet Sauvignon’ fruit were directly added to the crusher/destemmer, cold soaked, and then fermented.
 - This research has shown that 5-10 BMSBs per 25 pound lug of white grapes can impart a perceptible taint in the juice for up to 4 months.
 - Research has shown that the perceptible taint in the juice HAS NOT LEAD TO A PERCEPTIBLE SENSORY TAIN IN THE WINE AFTER FERMENTATION , however the presence or absence of the compound has not been verified in the wine.
 - It is best to be conservative and try to **eliminate or greatly minimize** their presence in the fruit before processing.

Acknowledgements

The author would like to thank Dr. Tony Wolf, Professor of Viticulture at Virginia Tech, Winchester, VA, for his cooperation in the juice and wine taint research.

07-22-11