



Timely Viticulture

- Dormant
- Pre-Bloom
- Bloom
- Post Bloom
- Mid Season
- Pre-Harvest
- Harvest
- Post Harvest
- Dormant

Joseph A. Fiola, Ph.D.
 Extension Specialist in Viticulture and Small Fruit
 University of Maryland Extension

"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.

Round Two: Multi-Colored Asian Ladybeetle (MALB) Management For Grape Growers

By Joseph A. Fiola, Ph.D., Extension Specialist in Viticulture and Small Fruit

The previous "Timely Viticulture" addressed some basic information on MALB and this message will concentrate on management tactics. Some sections of this message were intentionally repeated, but there is new information throughout.

- Many of the MALB will come from local soybean fields after they start senescing, defoliating from frost, or as prey items (aphids, etc.) disappear.
 - When soybeans are harvested is highly dependent upon whether they are full season or if they were planted under double crop production following small grain harvest.
 - * There have already been a few soybeans harvested or are ready for harvest in some areas.
 - * The majority of full season soybeans are generally harvested during the first three weeks of October.
 - * Double crop soybeans are generally harvested during late October and early to mid November.
 - * You are more likely to see double crop soybeans on the Eastern Shore than in Central and Western Maryland.
- Growers concerned about ladybeetles should be monitoring/scouting fields regularly for the first signs of the beetle.
 - MALB does not cause direct fruit injury, but instead will infest fruit previously damaged by other insects, pathogens, rots, birds, wasps.
 - Monitoring should begin 14 days prior to expected harvest for each cultivar.
 - Traps may be used to detect MALB movement into vineyards, however, there are currently no action thresholds to indicate when to spray a vineyard if MALB are present.
 - The **Economic threshold** for perceivable taint in wine
 - * 2 beetles per kilogram of fruit (2.2 pounds)
 - * or 10 to 12 beetles per grape lug can taint juice
 - * The off flavors are not imparted by the beetle at harvest but rather during the crush/destem or fruit pressing

(Continued on page 2)

Management of the MALB

- Control fruit rots as these will attract the beetles.
- Mechanical or hand harvesting during the daytime may sufficiently shake the vines to cause the beetles to leave the grape clusters ahead of the harvester.
- Night harvesting may not create this effect as the beetle burrows deep into the cluster and becomes much less active.
- Remember these are lady beetles, which are typically considered VERY DESIRABLE, so labeled control is limited.
- Ladybeetles are efficient predators of pest insects for the majority of the growing season, and most chemical controls for this introduced beetle will also kill native predators thereby allowing other insects and mites to become a problem.
- Since the crop typically becomes infested just prior to harvest, growers' options are restricted by the need for materials with a very short PHI (pre-harvest interval).
- While these insecticides do a good job of knocking down the population, dead beetles often times can remain in or on the cluster. If harvested along with the fruit, the dead beetles can still taint the wine for at least 2 days.
- Control with insecticides
 - These are not suggested protective sprays; rather, they should be used only if MALB are present in significant numbers in vineyards.
 - While these insecticides do a good job of knocking down the population, dead beetles often times can remain in or on the cluster. If harvested along with the fruit, the dead beetles can still taint the wine for at least 2 days.
 - Always use best management practices for spraying (sufficient water volume to ensure thorough coverage, attention to pH, proper weather conditions for application).
 - Always observe the REI (reentry intervals) and PHI (preharvest intervals) on the labels to avoid unacceptable residue levels at harvest.
- The pyrethroid Danitol is effective but has an extremely long pre harvest interval (PHI: 21 Days). This leaves the crop vulnerable to attack by MALB before harvest.
 - The pyrethroids are harsh on other beneficial insects that may be present in the vineyard leading to secondary pest outbreaks.
- Evergreen EC 60-6, an MGK Co. pyrethrum insecticide has both knock down and repellency activity so it can flush beetles out of grape clusters. While some of the beetles eventually recovered, this type of activity might help growers remove beetles from their crop and harvest the fruit with reduced potential for contamination. The recommended rate is 6-12oz per A. It has a 12 hour REI (re-entry interval) and 0 days to harvest restriction and is considered a restricted use insecticide.
- Carbaryl (trade name Sevin - carbamate family of insecticides – 7 day PHI) is registered but may be

(Continued on page 3)

considered objectionable by winemakers due to potential residue concerns in finished products. It is also considered harsh on other beneficial insects.

- Malathion (malathion – 3 day PHI) is registered, but again may be considered objectionable (odor) by winemakers.
- Provado (active ingredient imidacloprid – 0 day PHI) is labeled for use on grapes in the U.S. and has a very short PHI so it looks the most promising.
 - Imidacloprid is not considered a contact pesticide, but extremely low rates of this compound have demonstrated the ability to knock these beetles down but not kill them. After removal from contact exposure, the beetles fully recovered in a few hours.
 - This attribute may provide a means of knocking the beetles out of the grape canopy prior to harvest, but still allowing them to recover. Timing of spray and harvest would have to be carefully coordinated.
- Azadirect (active ingredient azadirachtin, an organic insecticide derived from the neem tree) also has repellent and “knock down” activity that temporarily stuns the beetles. Since it has a 4 hour re-entry interval, 0 PHI you can then come in soon after application and harvest before the insects recover and reinfest. Preliminary investigations indicate that this product may itself cause off-flavors in wine. Rate is 1-2 pints per acre.
- Venom (dinotefuran) a new third generation neonicotinoid. Preliminary results in Ohio have been very encouraging in that this product will provide a longer window of opportunity for grape harvest post treatment. Regretfully, it may not be available from suppliers this season – check with your local distributor. It has a one day harvest interval on grapes.

Dealing with wines after the beetle flavor has been found has been relatively ineffective to date.

Here are some good web sites to check for pictures and fact sheets for more detailed information:

The Ohio State University website: <http://ipm.osu.edu/lady/lady.htm>

The Ohio State University Fact Sheet: <http://ohioline.osu.edu/hse-fact/1030.html>

Iowa State Insect Notes: <http://www.ent.iastate.edu/ipm/iin/ladybeetles.html>

Michigan State University web site: <http://www.ipm.msu.edu/beetleFruit.htm>

Kerr, Kevin, Q&A about MALB: <http://www.brocku.ca/ccovi/news/index.html#news1>