ReTain on Apple- Stop-Drop and Harvest Timing

Michael J. Fargione, Extension Educator, Cornell Cooperative Extension

Reprinted from Tree Fruit Grower Alert Message – Cornell Cooperative Extension-Thursday, July 12, 2012 (with comments and edits from Win Cowgill for NJ conditions)

In the midst of the earliest season in the last half-century, and with above normal temperatures so far this season, it is not surprising that we are expecting an early apple harvest. Each summer, I report results of the Blanpied/Silsby McIntosh CA Cutoff Model to give growers some idea how apple maturity might compare with other years. The model predicts the 2012 McIntosh apple crop could mature 10 day earlier than the 35-year average (1977-2011) (see the graph at: http://hudsonvf.cce.cornell.edu/resources/Tree%20Fruit/Harvest%20CA%20Window%20historical%20records%207-2012.pdf).

The model predicts maturity will be 9 days earlier than last year and 1 day ahead of the early 2010 season. Other factors could conspire to make optimal harvest timing earlier than even these predictions.

All of the models that predict timing of apple maturity base their results on temperatures during a short period after bloom (Blanpied/Silsby model uses 30 days after full bloom). As frequently pointed out by Dr. Terence Robinson, Cornell, these models fail to take into account temperatures later in the growing season, particularly in the month before harvest. Warm temperatures prior to harvest will speed up ripening, and increase the potential for pre-harvest drop on susceptible cultivars like McIntosh and Honeycrisp. The National Weather Service is currently predicting a warmer-than-normal August-October period in New York and New England http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

Both Mike and I (Win Cowgill) expect optimal harvest maturity for the first widely-planted apple cultivars (Gala, McIntosh and Honeycrisp) will arrive 10-14 days ahead of “normal” timing. It could be even earlier if August has significantly warmer-than-normal temperatures. Later-maturing cultivars should be less and less early as we progress into the fall harvest.

“Currently North Jersey peach harvest and early apple harvest (Pristine) is running a full 10-12 days earlier than normal.” Win Cowgill

SEE APPLE STOP DROP ON PAGE 2
The early season has numerous implications. With apples in short supply and likely worth a premium this fall, you will want to maximize your production. Consider the following:

- Be sure pickers, equipment, bins and storages are ready in time to pick fruit in the best condition.
- We know that excessive summer pruning, and summer pruning timed after August 1, can increase the potential for premature fruit drop. Make sure your crews do only light-moderate summer pruning and try and get it done on early-maturing cultivars like McIntosh before the last week of July.
- Do not allow crop-bearing trees to become drought-stressed as lack of water increases early drop.
- Have a clear plan for how and when you will use stop-drop materials like ReTain and NAA to effectively counter the early season and higher-than-normal potential for fruit drop this year.

Dr. Terence Robinson, Steve Hoying, Win Cowgill and others have been evaluating tank mixing ReTain with NAA for several seasons and the results seem better than either product used alone. In a nutshell, NAA delays drop by keeping the apple stem from separating from the spur, but it causes increased fruit ethylene production and subsequent fruit softening. ReTain reduces ethylene production by the fruit, but also delays color development and may not compensate for effects of warmer-than-normal heat which increases drop. By mixing them together, you can reduce drop while maintaining firmness. Lower rates of ReTain are less effective at controlling drop and keeping fruit firm, but also have less negative impacts on color development. Here are some suggestions for stop drop control for this season:

**McIntosh**

In the Hudson Valley, Dr. Robinson has suggested that the maximum drop control on McIntosh can be achieved by tank mixing ½ rate of ReTain (1 pouch per 2 acres) + 10 ppm NAA (4 oz. Fruitone-N or 4 fl. oz. of Fruitone-L per 100 gal using tree row volume) at 4 weeks before the expected harvest date if ReTain were not used. Follow this with the same spray combination at 2 weeks before expected harvest if ReTain were not used. This has worked well in North Jersey as well. The critical issue you must decide is when would you have picked fruit not treated with ReTain in a normal year. Assuming this year optimal McIntosh harvest timing for CA will be 10 days ahead of normal, here are my suggestions:

<table>
<thead>
<tr>
<th>Normal Mac harvest date if no ReTain used</th>
<th>2012 Mac predicted harvest date if no ReTain used</th>
<th>Timing of first ReTain+NAA application</th>
<th>Timing of 2nd ReTain+NAA application</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 31</td>
<td>August 21</td>
<td>July 24</td>
<td>August 7</td>
</tr>
<tr>
<td>September 3</td>
<td>August 24</td>
<td>July 27</td>
<td>August 10</td>
</tr>
<tr>
<td>September 6</td>
<td>August 27</td>
<td>July 30</td>
<td>August 13</td>
</tr>
<tr>
<td>September 9</td>
<td>August 30</td>
<td>August 2</td>
<td>August 16</td>
</tr>
<tr>
<td>September 12</td>
<td>September 2</td>
<td>August 5</td>
<td>August 19</td>
</tr>
</tbody>
</table>

Example - In central Ulster, I generally assume September 3 will be the optimal start of harvest for CA McIntosh (I know it depends on the strain and site). That means I would expect Macs without ReTain would be picked this year around August 24. Those growers would apply ½ rate of ReTain + 10 ppm NAA around July 27, and again around August 10, and would expect to pick those fruit around September 7 (this assumes you get 14 days harvest delay from the ReTain).

**Gala**

In my experience, Gala mature earlier than expected in hot seasons. ReTain is very useful in enabling harvest to be delayed to allow increased fruit size (and big $ value increases) while reducing greasiness and stem end cracking, and reducing the number of spot-picks needed. However, the full rate delays fruit color up to 3 weeks and is not recommended for use on Gala for wholesale sales. Normally both Dr. Robinson’s and my suggestion is to use one application of the ½ rate of ReTain + 10 ppm NAA at 2-3 weeks before expected harvest on non-ReTain treated fruit. Assuming you choose 3-weeks before expected harvest, see table below for ReTain timing.

**Note:** for NJ PYO blocks you may want to consider using the full rate this year to get up to three weeks delay so that fruit harvest falls in September for pick your owners.

**Honeycrisp**

Honeycrisp has all kinds of problems including pre-harvest drop, particularly in a hot year, and ReTain can be a help. However, ReTain has even more negative impact on color development on this cultivar. Dr. Robinson recommends 1/3 to ½ rate of ReTain applied 2-3 weeks before harvest on Honeycrisp (Fargione – given my observations, I would go with the 1/3 rate). He has not tested it, but believes the tank-mixing of 10 ppm NAA with ReTain would also be beneficial on Honeycrisp.

See Honeycrisp on page 3.
Normal Gala / Honeycrisp first-pick date if no ReTain used | 2012 Gala / Honeycrisp first pick harvest date if no ReTain used | Timing of single ReTain+NAA application
---|---|---
August 27 | August 17 | July 27
August 30 | August 20 | July 30
September 2 | August 23 | August 2
September 5 | August 27 | August 5
September 8 | August 30 | August 8

Comments
These are my best guesses based on what I have heard/learned. All these estimates may need to be adjusted to earlier dates if July and August turn out to be significantly warmer than expected. Other scenarios are possible and may provide equal or better results. Talk with your consultants and get their opinions. Harvest delays because of poor color development may be problematic as you need to schedule harvest of other cultivars, and fruit may already be too large on poorly-cropped trees. However, harvest delays also help fill bins with bigger fruit that didn't fall on the ground, and these fruit do have more time to develop color during cooler weather. I am happy to discuss these ideas with anyone, so give me a call.

I strongly encourage growers to view the video of Dr. Robinson’s helpful presentation on these issues which he gave at Fruit School. Click to view just the summary and conclusions [here](http://hudsonvf.cce.cornell.edu/resources/Tree%20Fruit/fruit%20school%202012/Robinson%20Stop%20Drop%20Control%20Summary%202-2012/Robinson%20Stop%20Drop%20Control%20Summary%202-2012.html) (12 minutes) or see the entire presentation [here](http://hudsonvf.cce.cornell.edu/resources/Tree%20Fruit/fruit%20school%202012/Robinson%20Stop%20Drop%20Control%202-2012/Robinson%20Stop%20Drop%20Control%202-2012.html) (46 minutes) or find them on the website. You will need Adobe Flash Player software on your computer which is available free at [here](http://get.adobe.com/flashplayer/). Your feedback on these videos and their value is encouraged.

If you have any questions please contact me at cowgill@njaes.rutgers.edu or call me to discuss.

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### Peach-ReTain for Peach Harvest Quality Management in 2012

*Win Cowgill, Area Fruit Agent*

ReTain has had a label for peaches since 2004. It has not been used widely by peach growers but has some specific benefits for PYO and direct market peaches, specifically the ability to manage maturity, fruit firmness, and stop drop of later maturing peaches.

For the past two seasons I have worked with Northern NJ growers with ReTain to assist with premature drop in late (September) ripening peach cultivars. It has worked successfully for this purpose. **One note of caution** from a trusted grower, “ if the peach trees are under stress (drought or heat) the ReTain does not work as well.” This confirms what we know from our apple ReTain work as well - if the trees are stressed they do not respond as well to ReTain.

**Note:** It is also labeled on plum, prunes and apricot.

New Jersey growers must focus harvest management strategies for optimum fruit quality. Consumer demand, market demand, storage requirements and labor availability all influence harvest decisions. ReTain can be a tool for peach growers to manage peaches. ReTain has been evaluated on multiple peach varieties over multiple years. In general ReTain is a harvest management tool that slows the fruit maturation process.

ReTain works by retarding the development of ethylene, the chemical that causes ripening. The active ingredient is a natural occurring product aminoethoxyvinylglycine (AVG), which is produced by fermentation. The fermentation process required to produce AVG is very difficult and very expensive. Because of this, ReTain should only be used in high value varieties with a large crop of unblemished fruit.

**Benefits on Peach include:**

- Allows you to let peaches hang on the tree longer, allowing greater color development.
- Allows you to stagger harvest of a particular variety if needed, delaying harvest up to four days.
- Increased fruit firmness at harvest across most varieties tested allowing you to pick more mature fruit that is still firm when handled.
- Increased fruit firmness in cold storage over several weeks’ time.

ReTain works slightly different on each variety; you will need to evaluate it on a variety-by-variety basis. On a few cultivars there is very little effect, Redhaven is the most notable example.
ReTain must be applied 7-14 days prior to anticipated harvest to be effective, therefore it is essential growers carefully project ripening dates of each individual block which they plan to use ReTain this season. There is a 7-day PHI on ReTain with peaches and nectarines.

Important considerations to follow with ReTain applications on peaches in New Jersey

- Use the full rate of ReTain (1 pouch or 333 grams/Acre of formulated product) for peaches and nectarines.
- Apply 7-14 days before normal anticipated harvest (when harvest would be expected if not treated with ReTain).
- Use of organosilicone surfactant is not required on stone fruits but may be beneficial.
- If desired use an organosilicone surfactants such as: Silwet L77 at 6.5-13 fluid ounces per 100 gallons, or Sylguard 309 at 6.5-13 fluid ounces per 100 gallons. When high temperatures prevail, the lower rate of surfactant is recommended.
- Non ionic surfactants may also be used.
- ReTain should be applied with a sufficient amount of water to ensure thorough wetting of the fruit and foliage while avoiding spray run-off. Adjust water volume based on tree size and spacing. No alternate row spraying. 100 gallons per acre at 2x has shown to be effective.
- For optimum results apply during periods of slow drying weather conditions. No rainfall or irrigation should occur within six hours of ReTain application.
- Do not apply ReTain to trees under stress. They may not respond to the benefits of ReTain.
- Tank mix ReTain with other agricultural products has not been fully evaluated.

Note: read the label completely to fully understand the use of ReTain on stone fruit; there are significant differences in use as compared to apple.

If you have specific questions regarding the use of ReTain on peaches do not hesitate to contact me at cowgill@njaes.rutgers.edu.

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### Calendar of Events


**August 1, 2012**, Rutgers Turfgrass Research FIELD DAY 2: Lawn, Landscape & Sports Fields. At Adelphia Farm, Freehold, NJ. Sponsored by New Jersey Turfgrass Association, execdirector@njturfgrass.org, (973) 812-6467.

August 7, 2012, 1:00 – 3:30 pm. **Orchard Pollinator Field Day**. At Penn State Fruit Research & Ext. Center. 290 University Dr., Biglerville, PA. Sponsored by Penn State Coop. Ext. Contact Katie Ellis at kag298@psu.edu for more information.


August 29, 2012, 3:00 – DUSK, **Tomato Tasting**. At Snyder Farm - Research Building, 140 Locust Grove Rd, Pittstown, NJ. Sponsered by Rutgers Snyder Research Farm. Contact Joanne Stively, stively@aesop.rutgers.edu, (908) 730-9419 ext. 2. RSVP website: http://snyderfarm.rutgers.edu/tomatoes.html. Event will be held Rain or Shine - 3:00p.m. to dusk. Fee is $7.00.

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### NJ Direct Marketing Association Meeting

You are invited to the NJ Direct Marketing Association’s Meeting on Tuesday, July 24, 2012 at 6:00 p.m. at Giamarese Farm, 155 Fresh Ponds Road, East Brunswick, NJ.

**In Cooperation with Rutgers NJAES Cooperative Extension**

**Agenda**

- Farm Tour
- Update from the Agritourism Working Group
- Update on web presence and statewide marketing and promotion efforts
- Brief Association Meeting

We look forward to seeing you at the meeting.

Please **R.S.V.P. by July 17th** to Carol Richiusa, Rutgers Cooperative Extension of Middlesex County Secretary at 732-398-5262 or email carol.richiusa@co.middlesex.nj.us.

Hope to see you there!
Fruit IPM

Dean Polk, Fruit IPM Agent and David Schmitt, Eugene Rizio and Atanas Atanassov, Ph.D., Program Associates, Tree Fruit IPM

Peach
✔ Oriental Fruit Moth (OFM): Trap counts are very low, indicating a very light population. In many cases, growers do not have enough OFM to justify treatments. However, due to other insects, principally the brown marmorated stink bug (BMSB), growers are applying insecticides. This should be close to the peak flight. In northern counties insect populations are higher than in southern counties, and a couple of farms have counts in excess of 20 moths per trap, but on most farms the count is more like 0-1 moths per trap. If the population is very low, then growers can concentrate on other pests like the brown marmorated stink bug, see below. For those growers with significant OFM populations, degree day spray timings are as follows for the third generation:

<table>
<thead>
<tr>
<th>County Area</th>
<th>Application and Insecticide Type 3rd Brood OFM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>Standard Insecticides</td>
</tr>
<tr>
<td>Central</td>
<td>2nd 7/18-19</td>
</tr>
<tr>
<td>Northern</td>
<td>1st 7/28-30</td>
</tr>
</tbody>
</table>

✔ Brown Marmorated Stink Bug Insecticide Use: We continue to see low levels of activity in southern county peach and apple orchards, particularly in blocks that are being harvested or in apples that are on “soft” insecticide programs. One or two farms in northern counties, have higher populations. Even if no insects are being seen, some feeding damage is present. Adults and nymphs are present in wooded borders, and can move into the orchard. We observed an example of this today in Gloucester County, where second and third instar nymphs were present on mulberry and other wild hosts next to a ripening peach block. If growers cannot keep a 7 day alternate middle schedule up, then supplemental border sprays (on the peach trees) will help.

Scorpion and Venom Labels: The Scorpion and Venom section 18 labels were approved for New Jersey this past week. The intention for obtaining these labels is to provide a tool that effective for BMSB control that can be used late in the season during peach ripening and preharvest, and on apples at similar timing during the last week or two preharvest. Labels are attached.

The following restrictions apply to these products for pome and stone fruit (Taken from the EPA authorization letter to NJDEP):

3. “Venom Insecticide may be applied to stone and pome fruit at a maximum rate of 4-6.75 fluid ounces (0.179-0.302 lb a.i.) of product per acre. Scorpion 35SL Insecticide may be applied to stone and pome fruit at a maximum rate of 8-12 fluid ounces (0.203-0.304 lb a.i.) of product per acre. For each of these products, a maximum of 2 applications may be made per acre per season and with a minimum 7-day application interval. No more than 0.608 lb a.i. may be applied per acre per season. Only foliar application made by ground equipment is permitted.”

6. “A 12-hour restricted entry interval (REI) and a 3-day preharvest interval (PHI) must be observed.”

✔ Tufted Apple Budmoth (TABM): (Reprinted but updated from last week) This insect is also showing very low trap levels, largely since we are between the 2 generations. If you have a farm where TABM has been a problem, and trap counts were high during the first generation, then plan on timing treatments for the second generation. Degree day (DD) timed treatments are outlined for either alternate middle (AM) applications where 4 sprays are needed per generation, full cover every middle (EM) applications where 2 sprays are needed per generation. Timings for these sprays, unless the prediction is too far in the future, are as follows:

<table>
<thead>
<tr>
<th>County Area</th>
<th>Conventional, Diamides</th>
<th>Conventional, Diamides</th>
<th>Intrepid, Rimon</th>
<th>Bt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>AM 1st 7/23-7/24; 2nd 7/29-7/31</td>
<td>EM 1st 7/25-7/27</td>
<td>EM 1st 7/27-7/30</td>
<td></td>
</tr>
<tr>
<td>Northern</td>
<td>Too far off</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See IPM on page 6
San Jose Scale (SJS): Crawlers should begin emergence sometime over the next week to ten days in southern counties. See last week’s newsletter for more information.

Apple

Codling Moth (CM): Codling moth timings are updated in the following table:

<table>
<thead>
<tr>
<th>Codling Moth Degree Day Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application and Insecticide Type</td>
</tr>
<tr>
<td>County Area</td>
</tr>
<tr>
<td>DD</td>
</tr>
<tr>
<td>Southern</td>
</tr>
<tr>
<td>Central</td>
</tr>
<tr>
<td>Northern</td>
</tr>
</tbody>
</table>

In some cases in northern counties, up to 5% fruit damage from the first generation is present, and trap counts are at 18-20 moths per trap. If you have this type of situation then alternative controls like the granulovirus, Cyd-X, and Carpovirusine are suggested options. This can be used every 7 days for the next several weeks. Check your calibration and coverage, and do not use OP or carbamate materials. Do not use pyrethroids in hot weather. Apply the granulovirus at dusk.

San Jose Scale (SJS): See peach section above.

Grape

Grape Berry Moth (GBM): The long range estimate for the third generation degree day timed insecticides are about 7/27 for Intrepid and the diamides.

Grape Root Borer (GBR): This is a more southern pest, but is found in NJ, and is a problem in some vineyards. The idea with insecticidal control is to apply a barrier of insecticide on the base of the vine and surrounding ground. GRB adults are now mating and laying eggs. Larvae emerge and borrow into the roots, so the insecticide kills emerging larvae as well as adults as they lay eggs. Use 4E @ 4.5 pt/100 gal, or Lorsban Advanced @ 4.5 pt/100 gal, or Lorsban 75W @ 3lb/100 gal.

Powdery Mildew: Conditions are very good for disease development. Mildew was seen on syrah clusters this past week in southern counties. Consult the 2012 Commercial Grape Pest Control Recommendations.

Scouting Calendar

The following table is intended as an aid for orchard scouting. It should not be used to time pesticide applications. Median dates for pest events and crop phenology are displayed. These dates are compiled from observations made over the past 5-10 years in Gloucester County. Events in northern New Jersey should occur 7-10 days later.

<table>
<thead>
<tr>
<th>Pest Event or Growth Stage</th>
<th>Approximate Date</th>
<th>2012 Observed Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pit Hardening Peach</td>
<td>June 16 +/- 8 Days</td>
<td>June 13</td>
</tr>
<tr>
<td>3rd Pear Psylla Hatch</td>
<td>June 28 +/- 1 Days</td>
<td>About July 2</td>
</tr>
<tr>
<td>San Jose Crawlers 2nd Generation</td>
<td>July 21 +/- 5 Days</td>
<td>Not yet observed</td>
</tr>
</tbody>
</table>

Blueberry

Spotted Wing Drosophila (SWD)...and Blueberry Maggot (BBM): Trap captures have continued to increase, as well as the number of traps having positive captures. For every positive trap catch, we are following with a picked fruit sample and looking for live larvae. Growers should be aware that drosophila larvae can be in the fruit if under a light insecticide program. Given the population that is present, we have no choice but to recommend a weekly schedule of insecticide covers for the remainder of the season.

Aphids: Aphid presence is about unchanged since last week. About 40% of samples are positive and 4% were over the 10% infestation level. Almost no large colonies have been seen in the field. Several sites have high levels of lacewing eggs.

Brown Marmorated Stink Bug (BMSB): In our recent samples we have noticed a slight decrease in numbers.

See BMSB on page 7
About 1% of our beating tray and shoot samples have been positive. Even though these are low numbers, growers should be aware of this insect possibly showing up in machine harvested fruit.

✔ **Leafrollers and Other Leps:** About 10% of shoot and beating tray samples are positive for live worms, but almost all of these positives have been due to blueberry leafminer tents. These are foliar feeders and not a risk to the fruit, especially since most of the fruit is off by now. Some growers do have a concern for contamination issues when machine harvesting.

✔ **Japanese Beetle:** No significant Japanese beetle presence has been seen this season. About 4% of samples still show beetles on fruit and foliage, and when injury is seen it is usually on the foliage. No samples have been seen where a specific treatment would be required.

✔ **Anthracnose:** There has not been much change since last week. Only 3% of field fruit samples now show low levels of infection, with 0.1% infected fruit as the typical level seen.

### Trap Counts – Southern Counties

<table>
<thead>
<tr>
<th>Week ending</th>
<th>STLM</th>
<th>TABM-A</th>
<th>CM</th>
<th>AM</th>
<th>OFM-A</th>
<th>DWB</th>
<th>OFM-P</th>
<th>TABM-P</th>
<th>LPTB</th>
<th>PTB</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/16</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>37</td>
<td>0</td>
<td>5</td>
<td>21</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6/23</td>
<td>47</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>51</td>
<td>0</td>
<td>2</td>
<td>35</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6/30</td>
<td>22</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>29</td>
<td>0</td>
<td>1</td>
<td>19</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>7/7</td>
<td>15</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>21</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7/14</td>
<td>23</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>14</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

### Trap Counts – Northern Counties

<table>
<thead>
<tr>
<th>Week ending</th>
<th>STLM</th>
<th>CM</th>
<th>TABM-A</th>
<th>AM</th>
<th>DWB</th>
<th>OBLR</th>
<th>OFM-P</th>
<th>TABM-P</th>
<th>LPTB</th>
<th>PTB</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/16</td>
<td>76</td>
<td>4.1</td>
<td>19.1</td>
<td>5.8</td>
<td>10.3</td>
<td>0.3</td>
<td>22.9</td>
<td>9.4</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>6/23</td>
<td>135</td>
<td>2.4</td>
<td>14.9</td>
<td>0</td>
<td>4.0</td>
<td>7.0</td>
<td>0.5</td>
<td>16.7</td>
<td>5.1</td>
<td>0.1</td>
</tr>
<tr>
<td>6/30</td>
<td>146</td>
<td>1.3</td>
<td>7.8</td>
<td>0</td>
<td>5.0</td>
<td>1.3</td>
<td>1.4</td>
<td>10.4</td>
<td>4.1</td>
<td>0.8</td>
</tr>
<tr>
<td>7/7</td>
<td>85</td>
<td>1.3</td>
<td>2.4</td>
<td>0</td>
<td>1.3</td>
<td>0.5</td>
<td>1.0</td>
<td>5.9</td>
<td>7.2</td>
<td>1.1</td>
</tr>
<tr>
<td>7/14</td>
<td>210</td>
<td>2.8</td>
<td>1.4</td>
<td>0</td>
<td>7.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.1</td>
<td>5.8</td>
<td>1.3</td>
</tr>
</tbody>
</table>

### Blueberry Insect Trap Captures

#### Atlantic County

<table>
<thead>
<tr>
<th>Week Ending</th>
<th>CBFW</th>
<th>RBLR</th>
<th>OBLR</th>
<th>SNLH</th>
<th>Or. Beetle</th>
<th>BBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/16</td>
<td>1.05</td>
<td>92.82</td>
<td>1.61</td>
<td>1.21</td>
<td>134.08</td>
<td>0.015</td>
</tr>
<tr>
<td>6/23</td>
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<td>6/30</td>
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<td>0.5</td>
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<td>0.52</td>
<td>433.89</td>
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#### Burlington County

<table>
<thead>
<tr>
<th>Week Ending</th>
<th>CBFW</th>
<th>RBLR</th>
<th>OBLR</th>
<th>SNLH</th>
<th>Or. Beetle</th>
<th>BBM</th>
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<tbody>
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<td>6/2</td>
<td>1.60</td>
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<td>7.5</td>
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<td>6/9</td>
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<td>33.5</td>
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<td>0.85</td>
<td>115.30</td>
<td>1.00</td>
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<td>172.38</td>
<td>0.524</td>
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<td>3.30</td>
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<td>0.32</td>
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<td>0.142</td>
</tr>
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</table>

See Venom and Scorpion labels on the next three pages.
SECTION 18 EMERGENCY EXEMPTION
USE DIRECTIONS
FOR USE AND DISTRIBUTION ONLY WITHIN THE STATE OF NEW JERSEY
FOR CONTROL OF BROWN MARMORATED STINK BUGS IN POME AND STONE FRUIT.

EFFECTIVE DATE: July 11, 2012
EXPIRATION DATE: October 15, 2012

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- All applicable directions, restrictions, Worker Protection Standard (WPS) requirements, and precautions on the federally registered product label for Scorpion 35 SL Insecticide (EPA Reg. No. 10163-317), as well as the Section 18 directions, must be followed.
- This label must be in the possession of the user at the time of pesticide application.
- Do not use Scorpion 35 SL Insecticide on pome and stone fruit after the expiration date of 10-15-12.

This compound is highly toxic to honey bees. The persistence of residues and potential residual toxicity of dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honey bee larvae and the eventual instability of the hive. This product is toxic to bees exposed to treatment for more than 38 hours following treatment.

DIRECTIONS FOR USE

<table>
<thead>
<tr>
<th>PEST</th>
<th>RATE OF SCORPION 35SL INSECTICIDE</th>
<th>REMARKS</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown Marmorated Stink Bug</td>
<td>8 - 12 fl oz/A (0.203 lbs - 0.304 lbs ai/A)</td>
<td>Use adequate spray volumes to insure complete coverage. Higher water volumes may provide improved insect control. Begin application when field sampling indicates pest activity. Use higher label rates when pest pressure increases and especially when adults are actively migrating into the orchard. Repeat as needed to maintain control, but not more often than every 7 days.</td>
<td><strong>Restriction:</strong> Do not apply more than a total of 24 fl oz/A of SCORPION 35SL INSECTICIDE (0.608 lb ai/A) per season. Do not make more than 2 applications per acre per season of this product or other products containing dinotefuran.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do not apply this product until after petal fall.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Foliar Application Only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Apply with ground equipment in adequate water to obtain uniform coverage (For best results, use at least 50 gallons/acre for ground applications).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Do not apply SCORPION 35SL INSECTICIDE within three (3) days of harvest.</td>
</tr>
</tbody>
</table>

Scorpion® is a registered trademark of Gowan Company, LLC.

EPA Reg. No. 10163-317
File Symbol: 12-NJ-05 (pome fruit); 12-NJ-06 (stone fruit)
Gowan Company
P.O. BOX 5569
Yuma, AZ 85366-5569
For use in connection with an emergency exemption authorized under the provisions of Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

For the control of brown marmorated stink bug (*Halyomorpha halys*) on pome fruit and stone fruit in the state of New Jersey.

**Effective use date:** 07/11/2012  
**Expiration date:** 10/15/2012  
**File identification:** 12-NJ-05 (pome fruit); 12-NJ-06 (stone fruit)  
**Section 18 2012-NJ-02-01**

*Venom* Insecticide is a soluble dispersible granule with a 70% concentration of the active ingredient *dinotefuran*.

**DIRECTIONS FOR USE**

Directions, restrictions and precautions on the registered product label for *Venom* Insecticide® (EPA Registration Number 59639-135) must be followed.

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Always read and follow all label directions, restrictions and precautions when using any pesticide alone or in tank mix combinations. The most restrictive labeling applies when using a tank mix.

*Venom* Insecticide is toxic to bees exposed to direct treatment or to residue on blooming crops and weeds. Do not apply *Venom* Insecticide® or allow it to drift onto blooming plants if bees are actively foraging in the treated area.

This section 18 label contains directions for use that do not appear on the EPA registered label of *Venom* Insecticide®. Please refer to the production label for additional information.
### Pome fruit

<table>
<thead>
<tr>
<th>PESTS</th>
<th>PRODUCT RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown marmorated stink bug</td>
<td><strong>FOLIAR:</strong> 4 to 6.75 oz/A</td>
</tr>
<tr>
<td></td>
<td>(0.179 to 0.302 lb ai/A)</td>
</tr>
</tbody>
</table>

### Stone fruit

<table>
<thead>
<tr>
<th>PESTS</th>
<th>PRODUCT RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown marmorated stink bug</td>
<td><strong>FOLIAR:</strong> 4 to 6.75 oz/A</td>
</tr>
<tr>
<td></td>
<td>(0.179 to 0.302 lb ai/A)</td>
</tr>
</tbody>
</table>

### Foliar Application

- Apply with ground equipment in adequate water for uniform coverage (a minimum of 50 gals/A).
- Do not apply *Venom* Insecticide within three (3) days of harvest.
- Apply a maximum of 2 applications per acre per season with a minimum 7-day application interval.
- Do not apply more than a total of 13.5 oz of *Venom* Insecticide or products containing dinotefuran (0.604 lb ai) per acre per season.
- *Venom* Insecticide has a REI of 12 hours.
- Refer to label for necessary PPE to handle this product.
- Do not apply this product until after petal fall. This compound is highly toxic to honeybees. The persistence of residues and potential residual toxicity of dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honeybee larvae and the eventual instability of the hive. This product is toxic to bees exposed to treatment for more than 38 hours following treatment.

### Special Instructions

**Stink bugs:** Coverage is essential for adequate control. Use sufficient water volume to ensure good coverage.

*Venom* Insecticide may be tank mixed with other insecticides for better knockdown and/or improved control of pests. Use higher rates when stink bugs are actively migrating from neighboring fields.

This labeling must be in possession of the user at the time of pesticide application.

**Please contact Valent U.S.A. Corporation at 1-800-6-VALENT (682-5368) to determine if this product is registered in your state.**

Registrant: Valent U.S.A. Corporation  
P.O. Box 8025  
Walnut Creek, CA 94596-8025

*Venom* is a registered trademark of Valent U.S.A. Corporation.
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Cindy Rovins, Agricultural Communications Editor

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

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