New Fungicides for Brown Rot Control on Stone Fruit II

Norman Lalancette, Ph.D., Specialist in Tree Fruit Pathology

In a recent issue of this newsletter, we discussed use of the new fungicide Fontelis for management of stone fruit diseases. And in a much earlier spring issue we discussed use of Inspire Super. In this article, we’re going to focus on another recently released fungicide, Quadris Top.

Quadris Top, sold as a 2.72 SC formulation, has two active ingredients: azoxystrobin, which belongs to the QoI chemical group (FRAC code 11) and difenoconazole, which belongs to the DMI chemical group (FRAC code 3). The fungicide is labeled on a variety of stone fruits, including apricot, sweet and tart cherry, nectarine, peach, plum, plumcot, and prunes. Quadris Top is also labeled on grapes, strawberries, and a variety of vegetable, field, and nut crops. On stone fruit, Quadris Top has a rate range of 12-14 fl. oz. per acre, a re-entry interval (REI) of 12 hours, and a preharvest interval (PHI) of 0 days. A maximum of 56 fl oz/acre/season can be applied to an orchard, which results in a limit of 4 applications per season. A maximum of two sequential applications are allowed before switching to a fungicide with a different chemistry.

In New Jersey, Quadris Top has been tested for peach disease control at the Rutgers Agricultural Research and Extension Center, Bridgeton, in 2008, 2009, 2011, and in the current 2012 season. During these years, Quadris Top has provided excellent blossom blight control and good to excellent brown rot control. Management of peach scab has been exceptional, making Quadris Top one of the best products for this disease when scab pressure is high (more on this below). However, rusty spot control was rated only fair to good, and Rhizopus rot management was poor, although additional data are needed for this latter disease. Given this disease control profile, the recommended use for Quadris Top in peach disease control programs is for management of brown rot during the preharvest period. Although the fungicide performed well for blossom blight control, use of other chemistries such as the anilinopyrimidines (Vangard), dicarboximides (Meteor, Rovral), and protectants (Bravo, Captan, Ziram) is preferred during bloom for resistance management.

Since Quadris Top consists of QoI and DMI active ingredients, the ideal rotational partner for preharvest brown rot control would not contain either of these chemistries. Unfortunately, most preharvest fungicides are either DMIs (e.g., Indar or Bumper), Qols (e.g., Gem), or premixes that contain one of these fungicide classes (e.g., Pristine or Inspire Super). However, since the other newly registered fungicide, Fontelis, contains an SDHI as its only active compound, it would be a perfect candidate for alternation in either three- or two-spray preharvest programs. Using all three fungicide classes in your preharvest programs that stretch across successively maturing cultivars is a great strategy for combating resistance development.

It would be perfectly acceptable to use two back-to-back sprays of Quadris Top as a preharvest program given that the fungicide is a premix of two different chemistries. Similarly, one could deploy Quadris Top and Pristine in a two-spray
程序。然而，这种使用应限于一个或两个栽培块每季，最好分开一段时间，由其他成熟的品种有不同的控制程序。

一般的想法是，允许从头到尾的喷洒，含同样活性成分的同一种产品，即使它们被混有另一种活性的化学物质。

尽管推荐的Quadris Top的使用是为在采后做防刺痛病虫控制，偶尔“紧急使用”对于获得彼时的香饼回生控制是有保证的给定的杀虫剂的有效的效果防止香饼当疾病压力是高的。常规使用对香饼控制是不被推荐的，因为我们要限制在对DMIs在覆盖期间的使用。例如，在2011年的一项研究，98%的没有处理的果有香饼的感染，平均160个果病。Quadris Top在14 fl oz/A，与Captan 80WDG在3.75 lb/A提供97%控制，与0.04个果病。而标准的Bravo Ultrex在3.3 lb/A，与Captan 80WDG在3.75 lb/A使得只有5%的果病与6.4个果病。这个标准的计划，或者Bravo，由硫盖，是通常足够的使用抗香饼在连年的菌种水平是低的。然而，一个更有效的计划是清楚地需要当病菌的水平是平均值的。

一个洞点在使用Quadris Top时是它含有的azoxystrobin，同样的活性成分在Abound，是不需要对大约一半的苹果品种。如果，你种的苹果品种是好的一个机会，只有在一两个苹果栽培块，那么它完全可能那是其中一些是敏感的。在这种情况，azoxystrobin含有的杀虫剂应该不用在所有的果园或有限的喷洒不是使用的苹果品种（如，蔬菜喷剂）；要避免任何的喷剂到苹果也重要。然而，如果你只有一个或两个苹果栽培块，然后它完全可能那是其中一些是敏感的，允许使用Quadris Top或Abound。

在综述中，Quadris Top提供另一个重要的工具来管理香饼在石果水果病虫害。此外，这个杀虫剂已经证明是一个能力有效地管理此病香饼在易发季节压力。在这种情况下，生长者应该能够快速恢复低香饼菌的水平，使的标准captan或二氧化硫计划可以被用了又再一次。

As I See It: Hail and Fireblight, Hot Weather, Drought Stress and Irrigation
Win Cowgill, Agricultural Agent

我们正在期望目前的温度极值今天后由调节性的天气。许多果园土壤仍然不能有充足土壤的水分到小果。这周的降雨不能是足够到补充土壤的水分。保持滴灌到不丢失你的土壤水分和大小你的果。苹果可以添加第三的他们的大小这一周之前收获，如果充足的水分是可用的。充足的土壤水分同时也帮助缓解压力在树在这些天的极端温度。新的树特别需要在2-3天的帽子来保持他们生长。

在一些情况下，请直接与我联系来讨论你的情况（lalancette@NJAES.Rutgers.edu）。在这种情况下，我们不推荐使用Strep来损害损害的苹果。然而，注意到Strep有一个50天的PPHI在苹果，它将不再适合在成熟早期的苹果。

注意：报告损害立即到你的保险代理和地方FSA办公室。甚至在与CAT覆盖所有事件都应被报告。

更多的风暴是预报为将来今天。

Bitter Rot仍然是一个在苹果的，尤其是晒伤了果。Honeycrisp是特别的敏感。保持全率的Captan是被推荐的。

Dr. Rosenberger, Extension Fruit Plant Pathologist, Cornell always suggests the following. “In years that hot humid weather during late July and August favors bitter rot, especially on early-maturing cultivars, fruit that suffered heat stress and/or sunburn are especially susceptible. Once infected they will provide inoculum for infecting other non-stressed fruit. The best defense is captan (at least 3 lb. /A of Captan-80), but higher rates may be needed if the disease is already showing up on a lot of fruit. Flint and Pristine also provide some protection, but they are better combined with captan when aiming for bitter rot control. Captan (at maximum rates) plus Ziram are used in Southern US for bitter rot control, but that level of defense is rarely required in the northeast.”

Retain Harvest Management Simplified and Summarized
Mike Fargione, Cornell Extension Educator

Notes and Comments from Win Cowgill for NJ conditions. Reprinted from Tree Fruit Grower Alert Message – Tuesday, July 24, 2012

Mike and I concur that there are lots of scenarios and opinions on how to use this product.

Here are our efforts to simplify it:

• Apply Retain 4 weeks ahead of when you predict you would pick McIntosh assuming Retain was not used. Apply Retain 3 weeks ahead of expected harvest (again pretending that Retain was not applied) for all other cultivars.

• We expect this to be a difficult season for pre-harvest fruit drop and encourage growers to tank mix NAA (at least 10 ppm or 4 oz. Fruitone-N or 4 fl. oz. of Fruitone-L per 100 gal using tree row volume) with each Retain application to drop-sensitive fruit.

• We look to be 10-14 days ahead of “normal maturity” this year. As mentioned in my 7/12 grower message, this means that the next 7 days may be the correct timing for Retain + NAA applications to McIntosh. In Northern New Jersey Gala follows a few days later.

• On McIntosh, use the full Rate of Retain + 10 ppm NAA at the 4 week timing, or better yet, use a ½ Retain rate + 10 ppm NAA at 4 weeks and repeat this spray again 2 weeks later.

See Retain on page 3
ReTain from page 2

Note: In North and Central NJ many of our apple blocks are PYO. For these blocks you may want to increase the rate suggestions below on Gala and Honeycrisp to further delay maturity and increase color. Gala and Honeycrisp ripening in August may be of little value for PYO marketing. Traditionally I use the ½ rate of Retain on Gala and HC at the Rutgers Snyder Farm but this year will be increasing the rate to delay maturity.

- On Gala, use a ½ rate of Retain + 10 ppm NAA at 3 weeks before expected harvest of non-Retain fruit to avoid greasiness and stem-end splitting and slow color development. This means Retain could be applied by this weekend in early-maturing blocks and early next week in most blocks.
- On Honeycrisp, use 1/3 to ½ rate of Retain applied 2-3 weeks before expected non-Retain harvest of fruit. We have not tested it, but tank-mixing 10 ppm NAA with Retain could also be beneficial on Honeycrisp. As with Gala, Retain could be applied by this weekend in early-maturing Honeycrisp blocks and early next week in most blocks.
- Include an organosilicone surfactant such as Silwet (12 oz per 100 gal) or Silken, as leaving this out will significantly reduce ReTain’s effectiveness.
- The label recommends you maintain spray tank solution pH of 6-8. Adjust the pH if necessary and check it again if you don’t spray out a tank right away.

Note: There are tables on Retain timing in last week’s (July 29, 2012) Fruit Plant and Pest Advisory newsletter for greater detail. If you wish to discuss your particular situation with Retain please contact me at: cowgill@njaes.rutgers.edu.

Notes from Chris Doll, Retired Fruit Specialist in S. Illinois


As I’m writing this on July 18, the temperatures are trending for 100 for the 12th time this year. It is not much different from what many growers are experiencing, and as in past years, I commiserate with Peach pickers working in the orchards (and also with the growers trying to make do during the heat and shortage of rain). The lack of rain makes the whole business more tenuous and worrisome. Availability of water for irrigation can be a great plus.

Drought years usually make the lasting impressions on people. I can remember 1934 for its heat, but not its effect on the crops. 1954 was memorable because of record setting high temperatures, and a long drought accompanied by searing winds that knocked out agronomic crops. More recently, it was 1988 and 2006, which were more localized. On July 11, 1988, I wrote about it being so dry that many pastures and fence rows were potential fire hazards as well as the cover crops in the orchard. Peter Hirst of Purdue wrote this week that drought can help some apple growers by reducing vegetative growth (less pruning needed). I agree. I have seen very few apple trees die from lack of moisture on stress sites, so that is rare. Peach trees show such stress by dropping leaves first. But the shortage of water combined with the heat to reduce fruit size and quality. Young trees planted this spring might need a drink, especially if not under good culture free from competitive grass, weeds, and mature trees.

The season continues to be early for fruit maturity. My first Bounty peach and Gala apple (the original with 15.2 % SS and tough skin) picking were 18 days ahead of any previous year. Peach growers report a 16- to 20-day advancement for many varieties until this week, when the maturity rate has slowed down. I can see the same thing. As it stands locally, there are not too many peach varieties left, but the fall apple season is very near, if my Gala and some others I’ve seen are any indication. Lots of sunburned apples are visible, but the internal burning is not bad because of very little red color development. Fully loaded dwarfed trees with lots of exposed fruits are showing more injury than mature semi-dwarfed trees. A question locally is whether Retain will slow growth down enough to get the crop into a more normal harvest season. Another is how effective it will be on non-irrigated trees if the current heat wave continues much longer. The 30-day pre-harvest time for a variety like Gala has passed, and Jonathans and the rest are not far behind.

Another seasonal job that poses a question is that of collecting leaves for analysis from the stressed trees. Since July 15-August 15 is the normal suggested time period, some leeway might be had on this.

And this year, the need for Roundup weed killers under the stress of the heat is less than normal because of the drought, except for weeds like climbing milkweed, johnsongrass, and a few others. If needed, care to keep the herbicide from contacting tree foliage to prevent its translocation into the roots.

Submit by Jerome Frecon, Agricultural Agent.

Where are the BMSB Populations?
Anne L. Nielsen, Ph.D., Specialist in Fruit Entomology

Despite seeing low numbers of BMSB in fruit crops early this season, we have noticed larger populations of nymphs along the wood edge. Mild stink bug damage is also present in tree fruit, even though populations are low. I observed late 5th instars feeding on alternate host plants in South Jersey (Salem County) over the weekend and activity in the orchards is increasing. Blacklight data from previous years suggests that a peak in flight activity will begin in South Jersey late this week and during the first week in August for Central and North Jersey. An increase in flight activity corresponds with a new generation of adults searching for host plants and is the time period where damage on various host plants — especially fruit — increases significantly. Monitoring crops for BMSB and native stink bug adults and damage should be occurring now.

Calendar of Events

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 – Great Tomato Tasting. Rutgers Snyder Farm, 140 Locust Grove Rd, Pittstown, NJ. RSVP website: http://snyderfarm.rutgers.edu/tomatoes.html. Event will be held Rain or Shine. Fee is $7.00.
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): 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>Intrepid</td>
</tr>
<tr>
<td>Central</td>
<td>2nd 7/23-24</td>
</tr>
<tr>
<td>Northern</td>
<td>1st 7/30-31</td>
</tr>
</tbody>
</table>

✔ Bifenthrin Label for Stone and Pome Fruit for BMSB Control: We have just received notification that the multi-state section 18 application for bifenthrin was approved. We are waiting for the state specific labels from the companies, which should be available any day. There are 3 formulations that were approved, made by 2 companies. These are Brigade WSB (FMC), Bifenture EC (United Phosphorus, Inc. – UPI), and Bifenture 10DF (UPI). While the section 18 approval took longer than expected, we will have the labels, but not get the full benefit from the products, since we have an early season, and because of the following restrictions. There is a 14 day preharvest interval and a 30 day minimum time between applications. This means that where it can be used, only one application will be possible on peaches and nectarines. This is one of the more effective materials for brown marmorated stink bug, and since we are entering into a time when BMSB will be more active, many growers will find this useful.

✔ Brown Marmorated Stink Bug (BMSB): We are still seeing only very low populations with occasional nymphs and egg masses. As these nymphs mature more adults will be visible. See accompanying article on BMSB.

✔ Tufted Apple Budmoth (TABM): If TABM has been a problem, and trap counts were high during the first generation, then plan on treatments for the second generation. Timings for these sprays are as follows:

<table>
<thead>
<tr>
<th>County Area</th>
<th>Application and Insecticide Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>Intrepid, Rimon</td>
</tr>
<tr>
<td>Central</td>
<td></td>
</tr>
<tr>
<td>Northern</td>
<td></td>
</tr>
</tbody>
</table>

✔ San Jose Scale (SJS): Crawlers began emergence last week. Esteem, Centaur, and Movento, are the best materials for scale control at this time. Movento is very expensive, but will provide long lasting control once it moves into the tree. Since this takes some time, you cannot expect immediate control, and under heavy populations may still see some short term scale injury. See the Commercial Production guide for rates, labels and timing. There are several additional materials available for control. Leverage, Provado, Diazinon, and Assail are rated good. Field experience indicates that of these, Diazinon and Assail (with Assail being the better of the two) provide the best suppression.

Apple

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

<table>
<thead>
<tr>
<th>County Area</th>
<th>Application and Insecticide Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td></td>
</tr>
<tr>
<td>Northern</td>
<td></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 still above the treatment threshold of 5 males per trap. If you have this situation then alternatives like the granulovirus, Cyd-X, and Caropovirusine are options, applied every 7 days at dusk for the next several weeks. Check calibration and coverage, and do not use OP or carbamate materials. Do not use pyrethroids in hot weather.

Grape

✔ Grape Berry Moth (GBM): The recommended treatment timing in southern counties will be 7/25-26 for IGR's and Altacor or Belt. Older chemistries like OP's and pyrethroids can be applied a couple of days later. This is the third generation of GBM, and is probably more critical than generations 1 or 2. Insect populations often increase as the season progresses, and injury to more mature fruit is more likely to result in higher disease incidence than injury to fruit clusters that may have occurred 6-8 weeks ago.

Captures Southern Counties

<table>
<thead>
<tr>
<th>Date</th>
<th>GBM</th>
<th>GRB</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/9</td>
<td>0.29</td>
<td>0</td>
</tr>
<tr>
<td>6/16</td>
<td>0.43</td>
<td>0</td>
</tr>
<tr>
<td>6/23</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>6/30</td>
<td>3.29</td>
<td>.8</td>
</tr>
<tr>
<td>7/7</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>7/14</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7/21</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

See IPM on page 5
Grape Root Borer (GRB): Trap counts increased since last week, showing more significant populations in some vineyards. If you have a GRB population in your vineyard, then treatments should be made as soon as possible. Use 4E @ 4.5 pt/100 gal, or Lorsban Advanced @ 4.5 pt/100 gal, or Lorsban 75W @ 3lb/100 gal.

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): Trap counts continue to increase. As we have seen positive trap counts, we take fruit samples to look for live larvae in the fruit. Some positive samples have been noted. Most of these were from late harvest fields intended for machine picking. Regardless of the end market, be aware that the fruit must pass USDA grade standards, and that insect presence is a significant cause for downgrading or rejection. The following is taken from the USDA publication, “Blueberries: Shipping Point and Market Inspection Instructions, 2002”:

“Insects or Insect Injury (Q or C) - Various types of insects may affect blueberries. Regardless of the type of insect, if there is any visible evidence of the insect, insect larva, feeding, webbing or frass, it will be scored as serious damage against the serious damage tolerance (at market, score as serious damage by permanent defects tolerance when a quality factor [see below]). §51.3485 Serious Damage...(f) Insects or when there is any visible evidence of the presence of insects, including but not limited to an insect, the insect larva, feeding, webbing or frass.

At market, if the insects are live or there is evidence of fresh frass or feeding that occurred during transit, treat as a condition factor. If the insects are dead or the insect feeding or frass is old, treat as a quality factor. If both live and dead insects are present, treat as a condition factor.

Various regions in the United States are susceptible to an insect called Blueberry Maggot. This insect is difficult to see with the naked eye and may require a special test to detect it. If the applicant specifically requests this test see the procedures in Appendix II for details.”

Aphids: About 35% of shoot samples have been positive for aphids, and 4% of samples exceeded the 10% infestation level. Most were single insects. This is similar to levels found during the previous week.

Brown Marmorated Stink Bug (BMSB): Only a few egg masses, and motile forms are present. Very few have been picked up in machine picked fruit.

Leafrollers and Other Leps: About 12% of shoot and beating tray samples are positive for live larvae, and almost all of these positives have been due to BB Leafminer larvae. None of our samples show levels that are a concern.

Anthracnose: No change was seen since last week. About 3% of field fruit samples now show low levels of infection.

Putnam Scale: Tape traps are just starting to show some crawler activity. This is the start of the second generation. Growers who problems with scale presence on the berries, and who did not treat for the first generation, should plan on treating the second generation in early August.

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>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>
<tr>
<td>7/21</td>
<td>35</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>28</td>
<td>2</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>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>
<tr>
<td>7/21</td>
<td>283</td>
<td>2.6</td>
<td>1.0</td>
<td>0</td>
<td>2.0</td>
<td>4.0</td>
<td>1.4</td>
<td>2.9</td>
<td>3.7</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Blueberry Insect Trap Captures

Atlantic County

<table>
<thead>
<tr>
<th>Week Ending</th>
<th>CFW</th>
<th>RBLR</th>
<th>OBLR</th>
<th>SNLH</th>
<th>Or. Beetle</th>
<th>BBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/7</td>
<td>0.03</td>
<td>25.59</td>
<td>0.08</td>
<td>0.29</td>
<td>968.87</td>
<td>0.496</td>
</tr>
<tr>
<td>7/14</td>
<td>0.00</td>
<td>18.51</td>
<td>0.56</td>
<td>0.52</td>
<td>433.89</td>
<td>0.444</td>
</tr>
<tr>
<td>7/21</td>
<td>0.05</td>
<td>21.03</td>
<td>1.86</td>
<td>1.41</td>
<td>60.48</td>
<td>0.235</td>
</tr>
</tbody>
</table>

Burlington County

<table>
<thead>
<tr>
<th>Week Ending</th>
<th>CFW</th>
<th>RBLR</th>
<th>OBLR</th>
<th>SNLH</th>
<th>Or. Beetle</th>
<th>BBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/7</td>
<td>0.00</td>
<td>17.38</td>
<td>3.30</td>
<td>0.64</td>
<td>470.00</td>
<td>0.030</td>
</tr>
<tr>
<td>7/14</td>
<td>0.06</td>
<td>14.75</td>
<td>0.30</td>
<td>0.32</td>
<td>473.89</td>
<td>0.142</td>
</tr>
<tr>
<td>7/21</td>
<td>0.00</td>
<td>8.03</td>
<td>0.33</td>
<td>0.03</td>
<td>88.44</td>
<td>0.077</td>
</tr>
</tbody>
</table>
Early Yellow-Fleshed Peach Varieties
Jerome L. Frecon, Agricultural Agent

Note: Ripening dates are based on the averaged date over years evaluated not just 2012

◆ Sentry – A medium-large to large, globose, 60-70% scarlet red over green-yellow groundcolor, semi-clingstone peach ripening July 9-15 approximately 17 days before Redhaven. Flesh is moderately firm with good flavor. Tree is vigorous, spreading, and moderately productive, with low susceptibility to bacterial spot. Tree has a variable cropping record which makes the ripening season vary from year to year. Fruit was uneven and had soft tips in 2012.

◆ Ruby Prince – A medium-large, globose, attractive, 80-90% scarlet red over yellow groundcolor, yellow-fleshed semi-clingstone peach ripening July 11-13, approximately 15 days before Redhaven. The flesh is firm and with good flavor. The tree is vigorous, and moderately productive with low susceptibility to bacterial spot. This variety can produce quite a few split pits in some growing seasons. The size and firmness were excellent in 2012 but some of the fruit did have bacterial spot.

◆ Glenglo – A medium-large, globose, 60-80% scarlet red over a yellow groundcolor, yellow-fleshed semi-clingstone peach ripening July 11-14, approximately 13 days before Redhaven. The flesh is firm with good flavor. The tree is vigorous, spreading, and productive, with low susceptibility to bacterial spot. Glenglo is an attractive peach as an alternative to Sentry.

◆ Flamin Fury® PF# 7 – medium-large, ovate to globose, 60-70% complete crimson red over a greenish-yellow ground color, semi-clingstone, yellow-fleshed, peach ripening on July 12-15, approximately 12 days before Redhaven. The tree is vigorous, upright spreading, and very productive with low susceptibility to bacterial spot. This is a red peach with good productivity but, Glenglo and Sentry have better size.

◆ Flamin Fury PF #8 Ball – This yellow fleshed semi-clingstone ripens with PF 7A maybe a few days later. The fruit size and color were better than PF 7 in 2012. The tree is vigorous and susceptible to bacterial spot. The crop was light on young trees. Promising.

◆ Summer Serenade – A medium-large, globose to ovate, attractive, 50-70% crimson red over yellow-green ground color, yellow-fleshed, semi-clingstone peach ripening from July 13-16, approximately 11 days before Redhaven. The flesh is firm with fair to good flavor. The tree is moderately vigorous and productive, with low susceptibility to bacterial spot. Summer Serenade has better size than Garnet Beauty, a standard for many years in this season of ripening.

GaLa - A medium to medium-large, globose, 70-90% scarlet red over yellow-orange groundcolor, yellow-fleshed, semi-freestone. GaLa ripens in a season between Sentry and Redhaven July 17–21, approximately 8 days before Redhaven. The flesh is firm, with good flavor. The tree is spreading upright, vigorous, and moderately productive with medium susceptibility to bacterial spot. GaLa is a beautiful peach in a great season but is a challenge to size.

◆ Flavorcrest – A medium-large, ovate, 70-90% dark crimson red over a yellow ground color, semi-freestone peach ripening from July 17-21, approximately 7 days before Redhaven. The flesh is very firm with very good flavor. The tree is vigorous and moderately to lightly productive, with high susceptibility to bacterial spot. An older but attractive peach with high susceptibility to bacterial spot.

◆ Vulcan - A medium to large, globose to slightly ovate, 40-70% scarlet-orange-red over greenish yellow ground color, golden yellow-fleshed clingstone peach ripening on July 18-22, approximately 5 days before Redhaven. The fruit is firm with dense, non-melting flesh, and a good sweet and spicy flavor. The trees are spreading, very vigorous, and productive with low susceptibility to bacterial spot. A promising variety for processing in this early season.

We have some beautiful varieties in this season like NJ H7-47 (see photo on next page) – great color, firmness, productivity, with a very good low acid flavor

◆ Early Loring – A medium to medium-large, slightly ovate to globose, attractive, 60-80% scarlet red over greenish yellow ground color, yellow-fleshed, semi-freestone peach ripening July 24-27, approximately 1 day after Redhaven. The flesh is firm with very good flavor. The tree is vigorous and productive, with medium susceptibility to bacterial spot.

◆ Redstar – A medium-to medium–large, globose, 50-70% scarlet orange-red over greenish-yellow ground color, yellow-fleshed, semi-freestone peach ripening July 24-27, approximately 1 day after Redhaven. The flesh is firm with good flavor. The tree is vigorous and productive, with low susceptibility to bacterial spot. This peach must be thinned hard and early to get 2½ inch peaches.

◆ Flamin Fury® PF 15A - A medium large, globose, 70-80% crimson red over slight greenish-yellow ground color, yellow-fleshed, freestone peach ripening July 24-27, approximately 1 day after Redhaven. The flesh is firm with good flavor. The tree is vigorous and very productive, with low susceptibility to bacterial spot. This attractive peach produces better fruit size as the tree gets older.

◆ Red Haven normally ripens from July 25-August 2.

John Boy – A large, globose, 60-80% bright crimson red over a yellow-green ground color, yellow-fleshed, semi-freestone peach ripening July 28-31, approximately 3 days after Redhaven. The flesh is firm with good flavor. Tree is similar to Loring being very vigorous but more productive, with medium susceptibility to bacterial spot. John Boy is the standard all-around commercial variety in this season in New Jersey.

◆ Vinegold - A large, globose 30-50% scarlet red over orange yellow ground color; golden yellow-fleshed, clingstone ripening July 18-24, approximately 4 days before Redhaven. The flesh is dense, non-melting, no red in pit with a very good, sweet and spicy flavor. The trees are upright spreading, very vigorous, and productive, with low susceptibility to bacterial spot. The peach has great size and flavor for this early season variety.

◆ Flamin Fury® PF# Lucky 13 - A large, globose to slightly ovate, 70-90% scarlet red over orange-yellow ground color, yellow-fleshed, freestone peach ripening July 27-30, approximately 3 days after Redhaven. The flesh is firm to very firm with good flavor. The tree is vigorous, and productive, with low susceptibility to bacterial spot. This very attractive peach has also shown good size and is an increasingly important variety in this Redhaven season.

See Early Peach Varieties on page 7
**Early Peach Varieties from Page 8**

- **Blazingstar** – A medium-large, globose, 50-70% bright scarlet red over orange-yellow ground color, yellow fleshed, freestone peach ripening July 29 to August 1, approximately 4 days after Redhaven. Some fruit have raised sutures. The flesh is moderately firm with very good flavor. The tree is vigorous, and productive, with low susceptibility to bacterial spot. An attractive peach that is not as firm-fleshed as other varieties in this season.

- **Flamin’ Fury® PF# 14 Jersey** – A medium-large sized, globose to ovate, 50-80% crimson red over a greenish-yellow groundcolor, freestone peach ripening from July 29 to August 2, approximately 5 days after Redhaven. The flesh is firm and of good flavor. The tree is vigorous, spreading, and productive, with low susceptibility to bacterial spot. This peach was released for New Jersey because it was very attractive in our evaluations.

- **Flamin’ Fury® PF# 9A-007** – An ovate, large, 70-90% bright scarlet red over reddish yellow groundcolor, yellow-fleshed, semi-freestone peach ripening in July 29 to August 2 just before Redhaven. The flesh is firm, with good flavor. The tree is vigorous, moderately productive with low susceptibility to bacterial spot. This peach has good size but ripens in a season with many other more attractive peaches.

- **Late Sunhaven** – A large, globose, attractive, 50-70% scarlet red over yellow groundcolor, semi-freestone yellow-fleshed peach ripening from July 30 to August 3, approximately 6 days after Redhaven. The flesh is firm with good flavor. The tree is of medium vigor and moderately to lightly productive, with medium susceptibility to bacterial spot. An old favorite still popular with growers to extend the Redhaven season. This variety is sometimes also called Redhaven Special.

---

**Spotted Wing Drosophila Found in Small Fruit**

*Anne L. Nielsen, Ph.D., Specialist in Fruit Entomology*

Spotted wing drosophila (SWD) is another invasive fruit pest that has been found in NJ. SWD is a small (1/10”) fruit fly that looks similar to vinegar flies. Unlike native fruit flies, SWD attacks ripening fruit, especially thin-skinned fruit. Females use a serrated ovipositor to saw through the fruit skin to lay their eggs. The larvae (maggots) develop inside the fruit causing collapse. Fruits such as canebberries, blueberries, and grapes are at highest risk and in New Jersey we have found infested blueberries and now canebberries. We are currently trying to identify the risk for peaches and critical periods for grapes.

It is important to implement IPM programs to minimize the impact of SWD in NJ. The first step is to monitor the population with apple cider vinegar traps to determine if SWD is present. We recommend a conservative approach for management; if you have ripening fruit and SWD is present in vinegar traps, growers should: 1) increase monitoring efforts, 2) implement cultural control and maintain insecticide applications through harvest.

All infested fruit and dropped fruit should be collected and disposed of. Research in Oregon suggests placing fruit in a plastic bag in direct sun to kill larvae – composting and burying are ineffective measures. There are some reports that significantly increasing the number of vinegar traps may reduce infected fruit but this has not been studied thoroughly.

IPM programs for SWD are being developed although some insecticides already registered for canebberries will provide protection against SWD, specifically the pyrethroids, spinosads, and organophosphates. However, SWD has multiple generations per year and a very quick development time, therefore it is highly important to rotate insecticide chemistries with different modes of action. Due to the quick development time it is also important to be mindful of the PHI and the maximum allowable for each product. Malathion, Delegate and Mustang or Mustang Max have a 1 day PHI in canebberries and are recommended for control (see table). These compounds should provide 7 days of residual activity, although this will be decreased in hot weather for pyrethroids including Mustang Max.

Similarly for organic growers, insecticide recommendations are Entrust, Pyganic and Azera. Attaining proper spray coverage of the canopy is important as the flies rest in shaded areas.

Always read and follow label instructions!

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Label Rate for Canebberries</th>
<th>Max. allowable/Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malathion 5EC</td>
<td>2pt/A</td>
<td>3 applications</td>
</tr>
<tr>
<td>Delegate</td>
<td>3-6 oz/A</td>
<td>19.5 oz</td>
</tr>
<tr>
<td>Mustang</td>
<td>4.3 oz/A</td>
<td>25.8 oz</td>
</tr>
<tr>
<td>Mustang Max</td>
<td>4.0 oz/A</td>
<td>24.0 oz</td>
</tr>
<tr>
<td>Entrust</td>
<td>1.25-2 oz/A</td>
<td>9.0 oz</td>
</tr>
<tr>
<td>Entrust SC</td>
<td>4-6 oz/A</td>
<td>29 oz</td>
</tr>
<tr>
<td>Azera*</td>
<td>1-2 pt/A</td>
<td>10 applications</td>
</tr>
<tr>
<td>Pyganic 1.4EC*</td>
<td>6-4 oz/A</td>
<td>none</td>
</tr>
</tbody>
</table>

* 0 day PHI but a 12h REI

Insecticide recommendations from Oregon State University, Virginia Tech and NC State University.
Wine Grape Information for the Region
Mark L. Chien, Viticulture Educator, Penn State Cooperative Extension

Source Penn State Electronic Newsletter, July 19, 2012
Season so Far: It's hot and dry, again but unlike 2010, we are early this year. Let's just hope the dry weather continues with some intermittent rains, and not the monsoons of Aug/Sept last year. I saw the early onset of water stress in 3-year-old vines in a vineyard in Dauphin County. Growers, especially those with young vines, need to consider supplemental water if the dry conditions persist, and regulating crop to not further tax the vine's resources. My advisory committee met on Thursday and the report was that the Concord crop is significantly off but wine grapes are looking pretty good. Growing degree days and vines are 2-3 weeks ahead of whatever is normal, so if this pattern continues, be ready for an early harvest. Andy Muza reports ample grape berry moths in his hot spot vineyards, with the likelihood of a fourth flight, or even a fifth in the warmer southeast. Tony Mangus at Historic Hopewell Vineyard tracks GDD on his Davis weather station passed 1600 GDD a week ago and applied his second GBM spray. Especially in tight clustered varieties, growers should be proactive in thwarting GBM damage.

We discussed disease management and the need to carefully rotate fungicide between different groups. It appears that the streblurins may offer up to 15-20 applications before resistance occurs. Bryan Hed explained that the streb resistance appears extremely quickly, unlike the sterol inhibitors that experience a slow decline. Tank mixing non-resistance products such as a sulfur for powdery mildew or copper for downy mildew, and using full rates of the streb/SI products will help to delay the arrival of resistance. The dry, warm weather definitely helps to reduce disease pressure and vigilant growers may be able to extend spray intervals.

Canopies in Chester County vineyards were very clean, with only a few spots of black rot and downy mildew, but no powdery mildew. Berries should no longer be infected by powdery mildew, downy mildew or black rot, but foliage should still be protected. Last year we had canopies defoliate from downy mildew pressure, along with the sour rot and botrytis, and insect problems with fruit flies, bees and grape berry moth. While we are all trying to put 2011 into the deepest recesses of our memory, it would be very prudent to be on the alert for these problems this season. It’s my “farm for the worst case scenario” philosophy of Eastern winemaking.

This is a good time to be adjusting crop, keeping in mind that if the weather gets lousy, you don’t want the vines to be carrying too much fruit. Lag phase may have passed on some varieties but the multiplier can be adjusted to predict harvest cluster weights. On Concord and Chardonnay alike, knowing how much fruit is in the vineyard is a key piece of data for harvest and crush decisions. If the heat continues, remove leaves cautiously, if at all, as we head into veraison, to avoid sunburn on fruit. Shoot tips on many sites are slowing down. I often judge the potential quality of a vintage by how many hedging passes are made, and so far many vineyards have only made one, sometimes two passes.

There is no telling what the bird situation will be like this harvest. If you have a track record for bird damage, it’s time to start getting the nets ready. Two of our best vineyards are located near Oxford in Chester County. Tony and Karen Mangus own and operate Historic Hopewell Vineyard and have been producing fine wine grapes for their four winery customers for 6-7 years and have established a reputation as one of the area’s best wine vineyards. A key to their success are their vineyard workers, led by Lupe, who have been with them for years. Everything is meticulously cared for, the canopy management is superb. Weed control is handled with a blend of herbicide and grape hoe. I am always impressed by their sense of what grape varieties wine makers want, having just planted a lot of Sauvignon Blanc and Semillon, along with their Pinot Grigio, Syrah and Bordeaux red varieties. They are a role model for an independent vineyard. About a mile away is the Wilson Vineyard, developed by father-son team of Zach and Dave Wilson. These guys get it. Zach just graduated from Penn State and叫我 and said he wanted to start a vineyard. The information began to flow, the vineyard appeared, and they have done a superb job, in fact, the 3 year old vineyard is one of the best in the region, superbly designed for balance and well-groomed, the only serious problem is crown gall in Cabernet Sauvignon, which is hardly their fault. It is a fine example of doing your homework, but being smart enough to make important decisions on the go. They also planted the right number of acres (6) so they didn’t get overwhelmed, and they work really hard.

French Oenology in PA: I have learned over time that information gathered from other wine regions is vital to the progress of the one you are in. For our style of wines, France is an important influence and example. The Pennsylvania Quality Assurance group is hosting Dr. Alain Razungles from Montpellier on July 26-27 at the PSU Berks Campus to explore in great detail the aroma characteristics of wine. This should be a fascinating workshop for all commercial wine makers and a great learning opportunity. You just can’t get this stuff anywhere else, unless you go to France. Go to http://www.pawinegrape.com/uploads/PDF%20files/Documents/Events/PQA%20Summer%20Workshop%202012_chien%20edit%20v1.1.pdf for information and registration.

From Vine to Bottle: Making Decisions about Canopy Management – This looks like a really good meeting in the Finger Lakes at the NY State Agricultural Experiment Station on Thursday, August 9th, from 4 to 6 PM. At 5 PM it will be offered as a webinar to anyone who can’t make it to Geneva. Speakers include Cornell research viticulturist Dr. Justine Van den Huevel, Cornell state extension viticulturist Dr. Tim Martinson, and Cornell agricultural economist Dr. Todd Schmit. Their research takes an interesting approach of examining the cost-benefit relationship between various canopy management practices and their potential affect on wine quality and prices. There will be a tasting of experimental wines from Riesling and hybrids from canopy management trials at Geneva and C.S.E.L. (Portland, NY). Registration is free but required - https://cornell.qualtrics.com/S/?SID=SV_3DlmxFdPVxWVu4c.

Submitted by Jerome Frecon, Agricultural Agent.
PLANT & PEST ADVISORY

FRUIT EDITION - CONTRIBUTORS

Rutgers NJAES Cooperative Extension Specialists
George Hamilton, Ph.D., Pest Management
Norman Lalancette, Ph.D., Tree Fruit Pathology
Bradley A. Majek, Ph.D., Weed Science
Anne Nielson, Ph.D., Fruit Entomology
Peter Oudemans, Ph.D., Small Fruit Plant Pathology
Cesar Rodriguez-Saona, Ph.D., Cranberry/Blueberry Entomology
Daniel Ward, Ph.D., Pomology

Rutgers NJAES
Joseph Goffreda, Ph.D., Breeding

Rutgers NJAES - CE Agricultural Agents and Program Associates
Atlantic County, Gary C. Pavlis, Ph.D. (609-625-0056)
Gloucester County, Jerome L. Frecon (856-307-6450)
Hunterdon County, Winfred P. Cowgill, Jr. (908-788-1338)
Morris County, Peter J. Nitzsche (973-285-8300)
Passaic, Elaine Fogerty, Agric. Assistant (973-305-5740)
Warren County, (908-475-6505)
Fruit IPM, Dean Polk (609-758-7311)
Atanas Atanassov, Ph.D., Program Associate (908-788-1338)
Gene Rizio, Program Associate (856-566-2900)
David Schmitt, Program Associate (856-307-6450)

Newsletter Production
Jack Rabin, Associate Director for Farm Services, NJAES
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.

Use of Trade Names: No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

Reproduction of Articles: RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.

For back issues, visit our web site at: www.rce.rutgers.edu/pubs/plantandpestadvisory