**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):** According to the Skybit degree day accumulations, spray dates for the first generation are as follows, revised since last week:

<table>
<thead>
<tr>
<th>County / Region</th>
<th>1st Spray Date</th>
<th>2nd Spray Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monmouth – Central</td>
<td>4/17-20</td>
<td></td>
</tr>
<tr>
<td>Hunterdon - Northern</td>
<td>4/23-27</td>
<td></td>
</tr>
</tbody>
</table>

Growers who wish to employ mating disruption for OFM should begin placing ties or including sprayable pheromone in cover sprays once the first generation flight “bottoms out” as indicated by trap captures. This should be during the first to second week of May. Populations vary from orchard to orchard. See the production guide for more information regarding mating disruption for OFM.

✔ **Green Peach Aphid (GPA):** Aphid colonies are present in a few orchards, however only a few blocks in southern counties have populations which are above a treatment threshold. Only very low populations were seen in northern counties.

✔ **Thrips including western flower thrips:** Thrips were found feeding on young Nectarine fruitlets in one orchard in Gloucester County. Effective materials include Delegate and Lannate. Several pyrethroids like permethrin will suppress thrips populations.

✔ **Plum Curculio (PC):** PC adults usually begin egg laying sometime in late April or early May. Where control is poor fresh egg scars can be found on border rows, especially near wooded or trashy areas. This season, egg laying is occurring now, and will continue for the next several weeks. Preferred materials that offer PC control now are Actara, Avaunt, and Imidan. If using high rates of a neonicotinoid (i.e. Actara, Belay, Assail), be aware that there is a synergistic effect when used in tank mixes with DMI materials (i.e. Rally) with regard to bee toxicity. If pyrethroids are being used, then high rates are advisable, since low rates often do not control this insect, especially in hot weather. Growers should rotate away from pyrethroid insecticides if possible.

**See IPM on page 2**
✔ Stink Bugs and Other Cat-facing Insects: These pests will become more of an issue as temperatures warm and mowing and other ground cover activities become more common. General spray timing at this time of year should still be targeted for Oriental Fruit Moth and/or Plum Curculio (PC). Most materials, except the diamides (Altacor, Belt, Tourismo) used for these pests will have some efficacy for plant bugs.

✔ Brown Marmorated Stink Bug (BMSB): BMSB are starting to move out of their overwintering sites, but no activity has been seen in agricultural areas yet. Experimental traps are being placed this week in several locations. More on BMSB later.

✔ Peach Diseases: Once the shucks are completely off growers can safely switch to sulfur based programs for brown rot control. Where peach scab has been a problem, coverage with captan or another very effective scab control material should be continued. Where rusty spot has been a problem, fungicide applications targeting this disease should continue until pit hardening (see scouting calendar below).

Apple

✔ Codling Moth (CM): A Biofix for CM was set in southern counties on Sunday 4/15. This is about 2 weeks earlier than last year. Timing for the first of 2 sprays for the 1st generation is set at 250 to 350DD50 and again at 14 to 21 days later or around 550DD for the standard insecticides - OPs, carbamates, pyrethroids, neonicotinoids, spinosyns and Delegate, and granulosis virus. Granulosis virus is a biorational control marketed under the names Carpovirusine, Cyd-x and others. These products are useful as a supplement to mating disruption, or for resistance management. The timings for the IGR Rimon is at 75-100DD, and the IGR's Intrepid, and Esteem are at 100-150DD and again at 450DD. The newer rynaxypyr chemistries (Altacor, Voliam Flexi, Belt, and Tourismo) are another option at these timings. These materials have long residuals and are highly effective. They are better used for the summer generation which typically spreads out over a longer time period. The 2nd complete spray timing for CM often coincides with timings for tufted apple bud moth.

✔ Apple Scab, Powdery Mildew (PM) and Cedar Apple Rust (CAR): Overwintering ascospores are now 91% mature in Cream Ridge. Little moisture has occurred to release spores, and the fact that wetting periods are predicted starting this weekend through the middle of next week, all means that we could have some very severe scab infection periods with the next rains. Growers should be well covered with protective materials before the wetting periods occur.

✔ Fire Blight: Blossom sprays using antibiotics should be applied anytime temperatures are 65°F or above and the relative humidity is 60% or above even where most bloom is over. In southern counties, blocks of particular concern are Rome, Gala and other cultivars that have a propensity to produce “rat-tail” blooms. Refer to the production guide for recommended materials and rates. The NEWA site discussed in previous newsletters offers predictions of potential fire blight infection periods. Fire Blight is not modeled in the same way as scab. Heat units, tree phenology, dews, leaf wetness, cultivar, rootstock, and short or severe storms and/or hail all play a roll. Check the NEWA site for a more up to date prediction. In general, severe fire blight conditions are possible from 4/17-19.

✔ Plum Curculio (PC): See peach section above.

Scouting Calendar Southern Counties Tree Fruit

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 since 1995 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>1/4” Green Tip Red Delicious</td>
<td>March 27 +/- 10 Days</td>
<td>March 19</td>
</tr>
<tr>
<td>Tight Cluster Red Delicious</td>
<td>April 8 +/- 10 Days</td>
<td>March 26</td>
</tr>
<tr>
<td>Oriental Fruit Moth Biofix</td>
<td>April 8 +/- 10 Days</td>
<td>March 20</td>
</tr>
<tr>
<td>Pink Peach (Redhaven)</td>
<td>April 10 +/- 9 Days</td>
<td>March 19</td>
</tr>
<tr>
<td>Pink Apple (Red Delicious)</td>
<td>April 13 +/- 11 Days</td>
<td>April 5</td>
</tr>
<tr>
<td>Full Bloom Peach (Redhaven)</td>
<td>April 16 +/- 7 Days</td>
<td>March 26</td>
</tr>
<tr>
<td>Green Peach Aphid Observed</td>
<td>April 16 +/- 16 Days</td>
<td>March 29</td>
</tr>
<tr>
<td>Full Bloom Apple (Red Delicious)</td>
<td>April 20 +/- 9 Days</td>
<td>April 11</td>
</tr>
<tr>
<td>Petal Fall (Redhaven)</td>
<td>April 21 +/- 9 Days</td>
<td>April 10</td>
</tr>
<tr>
<td>Petal Fall (Red Delicious)</td>
<td>April 27 +/- 13 Days</td>
<td>Not yet observed</td>
</tr>
<tr>
<td>Shuck Split (Redhaven)</td>
<td>April 29 +/- 7 Days</td>
<td>Not yet observed</td>
</tr>
<tr>
<td>Tufted Apple Bud Moth Biofix</td>
<td>May 4 +/- 10 Days</td>
<td>Not yet observed</td>
</tr>
<tr>
<td>Plum Curculio Oviposition Begins</td>
<td>May 5 +/- 16 Days</td>
<td>Not yet observed</td>
</tr>
<tr>
<td>Oriental Fruit Moth – 375 DD target</td>
<td>May 10 +/- 10 Days</td>
<td>Current Forecast – April 4/24</td>
</tr>
<tr>
<td>Codling Moth Biofix</td>
<td>May 14 +/- 16 Days</td>
<td>Not yet observed</td>
</tr>
</tbody>
</table>

See Trap Counts on page 3
Tree Fruit
Fungicide Update:
Inspire Super
Norman Lalancette, Ph.D., Specialist in Tree Fruit Pathology

Inspire Super is a new premix formulation of the active ingredients difenoconazole (Inspire) and cyprodinil (Vanguard). Inspire Super will replace the older Inspire Super MP, which has the same two active ingredients, but were packaged separately (MP = “multi-pack”); the user simply tank-mixed the two ingredients. The MP product was only registered for use on pome fruit.

The new Inspire Super label has much broader fruit crop coverage than the original MP product. In addition to disease control on pome fruit (apple, crabapple, loquat, mayhaw, European and Asian pear, and quince), Inspire Super is also labeled for use on stone fruit (apricots, tart cherry, nectarine, peach, plum, plumcot, prunes) as well as grapes and strawberries. Note that Inspire Super should not be applied to sweet cherries.

Based on four years of field research trials on peach at RAREC, Inspire Super provided excellent control of blossom blight. Brown rot fruit rot control at harvest and postharvest ranged from good to excellent when subjected to heavy disease pressure. When Inspire Super was applied alone or alternated with captan, peach scab control was generally good but tended to be less effective than its sister fungicide, Quadris Top (difenoconazole + azoxystrobin). Based on one year of data, peach rusty spot control appeared good, but more results are needed.

Inspire Super has a 14-day and 2-day PHI for pome and stone fruits, respectively. A single application rate of 12 fl oz/A is labeled for pome fruit, while a rate range of 16-20 fl oz/A is listed for stone fruit. As with most site-specific fungicides, a maximum of two consecutive applications are allowed before alternating to a fungicide with a different mode of action (non-group 3 and non-group 9). And as always, follow all label restrictions.

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>
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<tbody>
<tr>
<td>3/24</td>
<td>2</td>
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<td>4/7</td>
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<td>2</td>
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<td>3</td>
<td>0</td>
<td>24</td>
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<td></td>
<td>0.34</td>
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</table>

Trap Counts – Northern Counties

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<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>
<th>BMSB</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/24</td>
<td>15</td>
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<td></td>
<td></td>
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<tr>
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<td>71</td>
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<tr>
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<td>1.8</td>
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</tbody>
</table>

To Do List from page 4

bloom. “Typiness” can be an important marketing advantage for some cultivars and markets. These materials are most effective when applied in a narrow timing window when king blooms are open. At later timings and at high rates, they can cause fruit thinning. The best response is obtained when temperatures are warm (>70°F) and the spray is applied as a fine mist in 50-100 gallons of water.

- Petal Fall Thinning- be ready to apply petal fall thinning sprays of Sevin, NAA or Sevin + NAA.
- Remember that at bloom and petal fall NAA is not as strong, therefore consider increasing the rate to 7-10 PPM of NAA as Fruitone L (3 to 4 ounces/100).
- Apply copper to newly planted apple trees before this weekend’s rain for fireblight control.
Apples are in full bloom in Hunterdon County; first bloom April 11 at Rutgers Snyder Farm. Bloom is three weeks early for us on apple and was four weeks early on peach.

With full bloom on apple for us and our NEWA fireblight disease forecasting system calling for severe fireblight risk Monday through this Thursday, we covered up all bloom apples and pears Sunday night and Monday. [http://snyderfarm.rutgers.edu/weather-pest-forecasting.html](http://snyderfarm.rutgers.edu/weather-pest-forecasting.html)

See the table from Rutgers Snyder Farm. Of concern is any wetting from dews or spraying that could trigger a wetting event causing an infection. Mike Fargione, Cornell recommends “If you cannot get to all your high risk blocks, concentrate on those that are most at-risk including: all pears; apples where you had fire blight in the last 2 years; highly susceptible apple cultivars, particularly 2-4 year old trees on M9 rootstock.”

### To Do List Suggestions
- Fertilize peach trees and small apples before the rain this weekend.
- Make sure you are covered up for apple scab before the weekend - we have not had an infection period yet but apple scab spores are 90% mature and ready to go.
- Apply Apogee in bloom for control of the shoot phase of Fireblight; use low rate of 3 OZ/100.
- Consider bloom thinning apple with NAA or ATS on heavy bloom blocks or hard-to-thin cultivars.
- Apply Promalin: We are in the window to apply Promalin (or Perlan or Typy) to increase the length to diameter ratio (“typiness”) of the fruit such as Delicious and Gala. For one application the timing is petal fall of the king.

See To Do List on page 3
Calendar of Events

April 18, 2012  7:15 pm – 9:30 pm, Evening Fruit Meeting - Gloucester County Office of Government Services-Auditorium, 1200 North Delsea Drive, Clayton, NJ, Sponsored by NJAES, 856-307-6450, ext. 1. Pesticide Credits will be issued.


April 28, 2012  10:00 am – 4:00 pm, Ag Field Day at Rutgers Day – George H. Cook Campus, New Brunswick, NJ. For more information: http://agfieldday.rutgers.edu.

May 3, 2012  2nd North Jersey Twilight Fruit and Thinning Meeting - hold the date location to be announced.

May 8, 2012  1:00 pm, Twilight Meeting for Fruit Growers, Lancaster/York Counties – Lancaster/York Co. Contact Tim Elkner, 717-394-6851, fax: 717-394-3962, tee2@psu.edu.

May 9, 2012  3:00 pm – 5:00 pm, Twilight Meeting for Fruit Growers, Adams County- McCleaf’s Orchard, 104 W. Guernsey Rd. Biglerville, PA. Contact Tara Baugher 717-334-6271, tab36@psu.edu.

May 24, 2012  Twilight Meeting for Fruit Growers, Southeastern, PA., Contact Rick Kaufmann, 610-378-1327, fax: 610-378-1327, rsk5@psu.edu.

Wine Grape Information for the Region

Mark L. Chien, Viticulture Educator, Penn State Cooperative Extension

Source Penn State Electronic Newsletter, April 17, 2012

Pennsylvania Research Symposium: The Pennsylvania Wine Research and Marketing Program (PWMRP) research committee is offering a program that presents current research findings and recommendations to the wine industry. In addition to Penn State researchers, we have invited Dr. Tony Wolf (Virginia Tech) and Drs. Tim Martinson and Anna Katherine Mansfield (Cornell viticulture and enology, respectively) to talk about their recent research efforts. This is an excellent opportunity to get up to date on the latest in V&E research from around the region. Symposium topics include: controlling vine vigor in the Eastern US, YAN and fermentation, cold climate viticulture practices, spotted wing drosophila and grape berry moth, sensory and wine chemistry research at Penn State, and a tasting of wines from the wine grape variety trial. The meeting will be at the Penn State main campus (State College) in Room 244 (sensory lab) of the Food Science Building (directly above the creamery), from 8:30 AM to 5:30 PM on Wednesday, May 23rd. Cost is $25 and registration is now available through Cvent at http://www.cvent.com/d/2cqp0t (click the red “register” button at the lower right on the web page). http://www.pawinegrape.com/uploads/PDF%20files/Documents/Events/Pennsylvania%20Grape%20and%20Wine%20Research%20Symposium%20Reg-info.pdf

Dizzy Viticulture: Slow, then fast, then slow again, then fast . . . this has been the pattern of changes between warm and dry, cool and wet, warm and wet and every possible condition in between that Eastern wine growers have faced in recent years. After such a wet fall it is amazing how dry it is as we begin the new season. After a burst of warm weather it has cooled considerably which can cause new and emerging shoots to stall, leaving them susceptible to damage from insects and diseases, and early spring nutrient deficiencies. Growers should be able to scout for all of these and know what's going on. This appears to be a normal pattern now, early bud break, extended frost season, wait-wait-wait, then a burst of warmth and the shoots grow a mile a minute. It all makes early season vineyard management tremendously difficult, it's sort of the “hurry up and wait” school of vineyard management. But when the warm weather arrives, growers should be ready.

Clean and ripe fruit, that is all the wine makers are asking for from their growers. In most years, with aggressive and anticipatory viticulture, clean and ripe is within our grasp. Diseases and insects play such a prominent role in the management of Eastern vineyards and is essential for fine wine production. Playing the disease game is very much about risk management and each growers’ tolerance for risk. For example, organic and biodynamic growers are trained to accept losses as part of their management philosophy. Most conventional growers have a very low threshold for accepting imperfect fruit. An integrated pest management plan should be designed around your risk tolerance.

There is a wealth of outstanding grape IPM management material available to help growers to plan their programs. It’s almost information overload but it is helpful, if not wise, to compare and weigh the recom-
Recommendations from different grape pathologists in different wine areas. I still believe that the NY-PA Pest Management Guidelines for Grapes http://ipmguidelines.org/grapes is the foundation resource for the wine grape growers in these two states (order a hard copy of the book). It is regularly supplemented by annual disease and insect updates by Dr. Wayne Wilcox and Dr. Greg English-Loeb, respectively from Cornell University. I also found these IPM resources to be very helpful:

Developing an Effective Fungicide Spray Program for Wine Grapes in Ohio http://www.grapesandfruit.umd.edu/Pages/FungicideSprayGuidelines2012-2.pdf, by Dr. Mike Ellis at Ohio State University. It is concise and easy to understand with excellent comments on resistance management and new fungicide products.


When it comes to diseases and pests that affect vinifera wine grapes, there is no one better than Alice Wise, Cornell Cooperative Extension on Long Island. Her weekly grapes column in the Long Island Fruit and Vegetable Update is an invaluable resource on every practical aspect of vineyard management with special emphasis on IPM. An e-mail subscription costs $15 and you can sign up by contacting Linda Holm at 631-727-7850 x341.

The coastal regions of the western states have bumped into a couple of serious La Nina years recently and that has meant levels of powdery mildew and botrytis that they are unaccustomed to. Dr. Wayne Wilcox's (Cornell University) disease IPM information is as good as it gets. In the recent Practical Winery and Vineyard (Spring, 2012), he offers an outstanding update on Controlling Powdery Mildew. http://www.practical-winery.com/spring2012/mildew1.htm. In the same issue, he writes about Overcoming fungicide resistance and there is an excellent article about the use of horticultural oils in Chardonnay (Laura Breyer, Breyer's Vineyard IPM Service).

Also in New York is the Lake Erie Regional Grape Program, http://lergp.cce.cornell.edu/IPM/IPMHome.htm Their weekly updates in the Electronic Crop Update provide valuable insights into the disease and pest conditions in the Erie region.


I’ll call out again the new Ontario Grape IPM website http://www.omafra.gov.on.ca/IPM/english/grapes/index.html as an excellent resource for Eastern N. American wine growers. Growing conditions may be a little cooler in Ontario but many of the IPM issues are the same as wine areas to the south, pay careful attention to differences in chemical names, registered products and measurements.

Virginia and Ohio are close in conditions to certain areas in PA so we can glean a lot of information from their updates and resources. Despite these resources, we are nowhere near complete control of disease and pest challenges. Persistent problems like yellow jackets, sour rot, crown gall, grapevine yellows, frost and freeze appear almost beyond the reach of any management strategy. Yet, in warm/dry vintages like 2007 and 2010, IPM may seem almost easy. Despite all the tools in the IPM toolbox, the BIG 5 fungal diseases can cause problems in almost any year.

e-Viticulture: Dr. Eric Stafne (Mississippi State) received a SCRI grant to develop an “E”xtension Grape Community of Practice and the practical result for grape growers is the e-Viticulture website http://eviticulture.org, a collaboration of all of the viticulture extension educators to place our collective knowledge and experience in one place.

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

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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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