**AT A GLANCE. INSECT AND DISEASE PROBLEMS THAT SHOULD BE CONSIDERED THIS WEEK.**

<table>
<thead>
<tr>
<th>PEST/DISEASE</th>
<th>WEEK OF MAY 2</th>
<th>WEEK OF MAY 9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROWTH STAGE</strong></td>
<td>BLOOM</td>
<td>BLOOM</td>
</tr>
<tr>
<td>Anthracnose</td>
<td></td>
<td>Continue anthracnose treatments →</td>
</tr>
<tr>
<td>Abound, Cabrio, Captan, Omega, Pristine, Switch, Ziram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botrytis</td>
<td></td>
<td>Watch for blossom blight symptoms</td>
</tr>
<tr>
<td>Elevate, Pristine, Switch</td>
<td></td>
<td>Treatments are no longer necessary</td>
</tr>
<tr>
<td>Mummyberry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phytophthora Root Rot</td>
<td>Apply Ridomil to soil or Phosphite to soil or via chemigation in affected areas</td>
<td></td>
</tr>
<tr>
<td>Thrips</td>
<td>Monitor using white sticky traps and by sampling thrips on flowers (beating tray samples). No economic injury level, however in past seasons our “concern level” has been about 7% of flowers w/ 1 or more thrips, or roughly 70 thrips per 100 clusters (about 1,000 flowers). Continue to monitor</td>
<td></td>
</tr>
<tr>
<td>SpinTor (Dusk), Delegate (Dusk), Entrust (Dusk). These insecticides are highly toxic to bees. Thus, use them when bees are not activity (dusk) to minimize exposure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leafrollers, spanworms, gypsy moth B.t., Intrepid</td>
<td>Use pheromone traps to monitor adult flight. Scout for larvae. Continue scouting for larvae. Use same threshold.</td>
<td></td>
</tr>
</tbody>
</table>

**BLUEBERRY TWILIGHT MEETING**
**TUESDAY, MAY 24, 2011 @ 5:30**
**PHILIP E. MARUCCI RESEARCH CENTER**
**125A LAKE OSWEGO RD. CHATSWORTH, NJ**
**FOR DIRECTIONS, CALL 609-726-1590**
**PESTICIDE CREDITS OFFERED**

**CULTURE**
**Dr. Gary C. Pavlis, Ph.D.**
**Atlantic County Agricultural Agent**

**Stunt or Iron Deficiency?** In Rouging out bushes with stunt disease, some growers have been confused by the stunt-like symptoms expressed by some plants. Blueberries affected by iron deficiency develop a yellowing of leaves (iron chlorosis) which does resemble leaf discoloration.
on stunted bushes. The main difference is that in stunt disease the leaves are cupped and yellowing occurs between the main veins. In iron deficiency, the leaves are not cupped; all of the little branchings stand out in a brilliant green and "netting" effect. Some leaves on bushes with iron chlorosis also have a pinkish-brown hue and the leaves at the base of the twig may be smaller than those toward the end. Many fields have small pockets of clay where the pH is higher than in the sand and the bushes may develop the stunt-like symptoms because iron is not available. Application of sprays containing iron is sometimes helpful but a permanent solution lies in lowering the pH by adding sulfur and/or organic matter to the soil. This is a special cultural problem and where more than just a few bushes are involved the grower should contact their county agent for advice on specific treatment.

No leaves: Growers visits this week have revealed fields with plants that have canes with fruit but no leaves. This is not Scorch. The lack of leaves usually points to a root problem. It could be grubs, it could be root rot. In non-irrigated fields, the lack of leaves is due to root damage due to lack of water during the drought last summer. This fruit probably will not ripen and the plant may not survive. Late summer/fall water applications are critical. In irrigated fields, I have seen many plants damaged by grubs. Admire is the control of choice in this case. Plants that have been damaged by grubs will pull out of the ground readily.

Lastly, toxic levels of Boron can also result in no leaves. Do not apply Boron unless leaf analysis indicates a deficiency.

Sincerely,

[Signature]

Gary C. Polk, Ph.D.
Atlantic County Agricultural Agent

Editor – Blueberry Bulletin
gp/slp

INSECTS
Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit
Mr. Gene Rizio, IPM Program Associate – Fruit

Leafrollers and Other Leps (Except Gypsy Moth): Considering both tray and shoot searches, about 3% of our samples have been positive for larvae. Only 1 shoot sample exceeded the threshold of 5% infestation and these were sawfly larvae. This species is not known to be a problem in NJ blueberries but there are a couple high activity areas that are being monitored for injury.

Aphids: Shoot samples have shown just a few aphids present at this early date. Only 2% of samples were positive. This insect complex will increase as the temperatures warm up.

Plum Curculio (PC): Tray samples have been positive for adults in 15% of our sites. While this may seem like an occasional problem, we know from experience that this pest is elusive and attempts to find the adult in a given area may never reveal presence. However, subsequent fruit sampling can and often is positive for egg laying, which can result in fruit infested with larvae. For example, in 2010 the peak weekly level of samples positive for PC adults caught was 11% while the peak level of fruit samples positive for egg scars was 64%. The best strategy to avoid getting scarred fruit in the package is to treat as soon as pollination is complete and bees are removed. PC adults are usually gone by the 1st or 2nd week of June.

Cranberry Fruitworm (CBFW): No adults were caught this past week, but some early captures were seen on Monday.
**Stink Bugs:** Traps for brown marmorated stink bugs have been placed near blueberry fields, but no captures have been seen as of this date.

**Thrips:** Adult thrips are being caught in low numbers in sticky traps. In some areas low populations can be seen in the field. Today (May 4), our model shows that thrips have accumulated 365 degree-days (they need about 380 degree-days to reach 10% emergence). The degree day model is thus estimating that 10% emergence will occur within the next 2-3 days. Therefore, if growers still have open bloom by the weekend, thrips may pose an issue if the populations are high enough.

### Blueberry Trap Counts – 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>4/9</td>
<td></td>
<td>27.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/16</td>
<td></td>
<td>71.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/22</td>
<td>0.0</td>
<td>76.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/30</td>
<td>0.0</td>
<td>70.6</td>
<td></td>
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### Blueberry Trap Counts – 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>
</tr>
</thead>
<tbody>
<tr>
<td>4/9</td>
<td></td>
<td>6.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/16</td>
<td></td>
<td>22.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/22</td>
<td>0.0</td>
<td>28.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/30</td>
<td>0.0</td>
<td>19.8</td>
<td></td>
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</tbody>
</table>

**Pyrethroids and Their Use in Blueberries**

*Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University*

*Mr. Dean Polk, IPM Agent – Fruit*

In the last couple of years several new pyrethroids have been registered for use in blueberries. These include: Mustang Max (FMC Agricultural Products), Danitol 2.4EC (Valent), Hero EW (FMC), Bifenture 10DF (United Phosphorus Inc.), and Brigade WSB (FMC). In general, pyrethroids have broad spectrum activity. In blueberries, pyrethroids (depending on the active ingredient and formulation) can control weevils, scales, leafrollers, fruitworms, aphids, and blueberry maggot, among other pests. Please read the label before using these insecticides because even though pyrethroids have the same mode of action, they are not always equal in their toxicological activity. These insecticides tend to be cheaper than some of the other new insecticides; thus, growers have been readily willing to adopt them even though they might not be as effective. If you plan to use pyrethroids, always remember to rotate chemicals with different modes of action to reduce chances of pest resistance.

As growers are aware, we have been very hesitant about recommending use of these insecticides in blueberries. Based on history in other crops, overuse of pyrethroids can lead to increases in pest problems. Pyrethroids are very toxic to beneficial insects (i.e., natural enemies - predators and parasitoids - of pests) and can thus disrupt biological control, causing increases of secondary pests due to the elimination of their natural enemies. For example, repeated use of pyrethroids can build scale and mite populations in tree fruit, and will likely build scale and leafminer populations in blueberry. Currently, the only pyrethroids we strongly recommend are Asana and Mustang Max to control cranberry weevil. Although pyrethroids, as indicated above, list other pests on the label, we do not have sufficient data to support their field efficacy against these pests, and thus do not strongly recommend them.

We are, however, re-thinking this position with the newer threat of invasive species. New insect pests
such as the Brown Marmorated Stink Bug (BMSB) pose a threat to blueberries. Pyrethroids are one class of insecticides that could help control this “potential” pest (we do not, at present time, know whether BMSB will become a pest of blueberries; we will be monitoring for this insect this summer).

Thus, we need to consider the possibility of using these insecticides when developing management programs for BMSB (or other pests) that can be integrated to current pest control practices. For this reason, this year we have started to test some of the new pyrethroids against different insect pests. Results from these trials will be presented in future grower meetings.

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**DISEASE**

*Peter V. Oudemans, Ph.D.*  
*Associate Professor and Extension Specialist*  
*Plant Pathology*

**WATCH FOR UNIQUE SYMPTOMS THAT MAY INDICATE NEW PROBLEMS!!**

As the size of the North American acreage increases and plants are being shipped from state to state there is an ever increasing risk of importing new pathogens to New Jersey or even providing an opportunity for movement of pathogens from native habitats to our cultivated fields. Our best defense is to keep our eyes open for unique symptoms that may be caused by invasive pathogens. There are a number of diseases reported from other states that currently do not exist here in New Jersey.

Symptoms you might see:

1. Dead or stunted buds and shoots. Although this may be caused by winter injury there may be other reasons for this symptom.
2. Leaves with unusual patterns of color development, spotting or blighting. Many nutritional deficiencies can result in unusual leaf color or development and there are numerous viruses that also cause these symptoms.
3. Flower drop and flower blighting. Sudden drop of flowers may be the result of various factors including some new virus diseases

What should you do if you find something?

1. Flag the bush and record the location in the field.
2. Collect a representative sample, place it in a ziplock baggie and store in refrigeration.
3. Call the P.E. Marucci Center (609-726-1590 ext 4410) to arrange for pickup.

In the following figure there are several diseases for which you should be on the lookout.

A. Blueberry Shock Virus next to a healthy or non-symptomatic plant (photo credit – R.R. Martin)  
B. Blueberry Shock Virus, close up of leaf symptoms (photo credit – R.R. Martin)  
C. Blueberry Fruit drop early symptoms (photo credit – R.R. Martin)  
D. Blueberry Scorch (photo credit – P. Oudemans)  
E. Blueberry Leaf Scorch (photo credit – P. Brannen)  
F. Funky Spot (photo credit – P. Brannen)

Please Note - Color pictures can be viewed on our Rutgers website at the address listed below:  
[http://njaes.rutgers.edu/pubs/blueberrybulletin/](http://njaes.rutgers.edu/pubs/blueberrybulletin/)
You Are Invited To An Informational Evening Meeting With
Dr. Andrew Landers, Cornell University

*Optimizing and Measuring Spray Distribution from Air Blast Sprayers*

<table>
<thead>
<tr>
<th>Date: May 11, 2011</th>
<th>Time: 5:30pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: Coia Vineyards, 3680 Oak Rd, East Vineland – see directions on following page.</td>
<td></td>
</tr>
<tr>
<td>Questions: Contact Dr. Gary Pavlis, (609) 625-0056</td>
<td></td>
</tr>
</tbody>
</table>

We are in receipt of an EPA region 2 (NJ and NY) grant to develop drift reducing technology for fruit sprayers.

We will demonstrate an adjustable air louvre which controls the amount of air leaving the sprayer. In early season spraying, when there is very little target to intercept the spray, we need a small amount of air; in full canopy we need more air. The louvres are infinitely variable allowing the operator to control the airflow as the canopy changes, each side of the sprayer is independent of the other.

We will also demonstrate, using a fluorescent tracer dye and blacklight, the effect of forward speed, airflow and application volume on deposition within the canopy.

Dr Landers studies and teaches agricultural engineering at Cornell University. He works with application systems in grapes, apples, vegetables and turf grass. Dr. Landers is author of the classic text book, Farm Machinery: Selection, investment and management and has recently published a new book, Effective Vineyard Spraying.
Directions to Coia Vineyards

From Hammonton:
1. SOUTH on RT 54 toward N 2ND St. Continue to follow RT-54 (about 10 miles).
2. RT 54 becomes WHEAT RD/CR-619
3. Turn SLIGHT LEFT onto LINCOLN AVE./CR-655 (if you reach S. Central Ave. you’ve gone to far)
4. Turn LEFT onto Oak Rd/CR681. (Oak Rd is 0.6 miles past Vine Rd.)
5. 3680 Oak Rd is on the LEFT

From Mays Landing
1. West on US-40/HARDING HIGHWAY (about 6 miles)
2. Turn LEFT onto CEDAR AVE/CR-540. Continue to follow CR-540 (2.9 miles)
3. Turn RIGHT onto UNION RD/CR-671 (1.0 miles)
4. Turn LEFT onto OAK RD/CR-681 (0.9 miles)

From Glassboro
1. N DELSEA DR/RT-47 becomes US-40/HARDING HWY.
2. Turn RIGHT onto WHEAT RD/CR-619.
3. Turn SLIGHT LEFT onto LINCOLN AVE/CR-655.
5. 3680 OAK RD is on the LEFT.

Seminar Planned On Food and Agricultural Exporting
Lynne Richmond, NJ Department of Agriculture
lynne.richmond@ag.state.nj.us

The New Jersey Department of Agriculture and Food Export USA-Northeast will present, “Exporting 101; Educational Seminar” on Thursday, May 19 at the Hilton East Brunswick Hotel.

The seminar is for individuals or companies who want to get started in food and agricultural exporting, or currently export U.S. food and agricultural products but are not aware of federal export assistance programs or might be eligible for a 50% matched funds reimbursement of their export promotion expenses through the “Branded Program.”

Dennis Lynch, an export counselor with Food Export USA-Northeast with 30 years of experience in international trade will speak on:

- How to develop export readiness skills
- Export pricing, quoting and terms of sale
- Export documentation and logistics
- Federal assistance programs available to help U.S. food exporters break into new markets

Companies that register before May 6 will receive a free market analysis of the top 10 foreign markets for their products.

Food Export USA-Northeast, a non-profit organization that promotes the export of food and agricultural products from the northeast region of the U.S., receives federal export development funding from the United States Department of Agriculture and administers export education and promotion programs on behalf of the 10 northeastern state Departments of Agriculture.
May 4, 2011                                             Vol. XXVII, No. 7

BLUEBERRY BULLETIN

If you have any comments about this newsletter, please make them in the space below and mail to:
Dr. Gary C. Pavlis, County Agricultural Agent
Rutgers Cooperative Extension of Atlantic County
6260 Old Harding Highway, Mays Landing, NJ 08330

I would like to see an article on the following subjects: __________________________________________

I would like to comment on the following articles:_________________________________________________
Title: __________________________________________ Date: __________________________________________
Comment: ____________________________________________________________________________________

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Sharon Ponzetti, Secretary
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