The BLUEBERRY BULLETIN
A Weekly Update to Growers
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AT A GLANCE. INSECT AND DISEASE PROBLEMS THAT SHOULD BE CONSIDERED THIS WEEK.

<table>
<thead>
<tr>
<th>PEST/DISEASE</th>
<th>WEEK OF APRIL 11</th>
<th>WEEK OF APRIL 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROWTH STAGE</td>
<td>IMMEDIATE PRE-BLOOM</td>
<td>EARLY BLOOM</td>
</tr>
<tr>
<td>Anthracnose</td>
<td>Nothing yet</td>
<td>Begin sprays at early-mid bloom</td>
</tr>
<tr>
<td>Phomopsis</td>
<td>Indar in fields where the disease is present</td>
<td>Fungicide applications are no longer useful for this disease</td>
</tr>
<tr>
<td>Mummyberry</td>
<td>Begin scouting for strikes</td>
<td>Fungicide applications in fields with evidence of primary infections (strikes)</td>
</tr>
<tr>
<td>Cranberry Weevil</td>
<td>Scout for adults and evidence of damage. Treat if 20% of clusters with damage or if ≥ 5 weevils/bush</td>
<td>Should be controlled</td>
</tr>
<tr>
<td>Asana, Guthion, Imidan, Mustang Max</td>
<td>Use pheromone traps to monitor adult flight. Scout for larvae. Treat if over 1 larva/100 clusters.</td>
<td>Continue scouting for larvae. Use same threshold.</td>
</tr>
</tbody>
</table>

BLUEBERRY TWILIGHT MEETINGS

WEDNESDAY, APRIL 27, 2011 @ 5:30
COLUMBIA FRUIT FARMS
534 MIDDLE RD.
HAMMONTON, NJ
FOR DIRECTIONS, CALL 609-839-0648

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

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

Blueberry Pollination
The bloom period of cultivated blueberries is from late April to late May in New Jersey. In many plantings there is an abundance of bloom throughout this period as the early, mid-season, and late varieties come into bloom. Individual blossoms drop soon after they are pollinated but may remain open for approximately 7-10 days if not pollinated. During most seasons, blueberries secrete nectar abundantly enough to attract bumble bees, solitary bees and honey bees that are necessary to pollinate the bloom. Refractometer readings show that the sugar content of the blueberry nectar ranges from 40 to 50 per cent sugar and that there are only a few other plants that offer a richer supply of nectar during the blueberry...
bloom period. Blueberry pollen is readily collected by the bees as they visit the blossoms. Bumble bees are important pollinators of highbush blueberries. They overwinter as fertilized queens and during the early spring period each overwintering queen establishes a nest and starts to rear brood. Bumble bee colonies are never very populous during the blueberry bloom period because a period of approximately 25 days is required for the development of the brood and during the early spring period the queen alone must construct the nest, gather the pollen and nectar food supplies to feed the developing young. Bumble bees are excellent foragers often visiting the bloom when low temperatures and winds restrict the flight of other bees. They work the bloom rapidly and gather large supplies of pollen and nectar needed to rear their young. They are strong flyers and often range over a large area to obtain their food supplies. The abundance of bumble bees in an area is closely correlated with the abundance of suitable nesting sites. Bumble bees are numerous in the bog and wooded areas but become very scarce in areas where land is intensely planted or cultivated.

Weather conditions during the daylight hours in late April and early May are not always ideal for insect flight. Light rains will stop bee flight entirely and winds will restrict flight. Wind velocities of approximately 15-16 miles per hour will stop honey bee flight altogether. Honey bee flight is very limited when temperatures are below 55 degree F. Low temperatures during the hours of darkness are not injurious to bees. Colonies of honey bees should be placed in blueberry plantings as soon as the early varieties come into bloom and should remain in the planting until the end of bloom. In large plantings the colonies should be distributed in groups throughout the planting. There is little advantage in distributing individual colonies throughout the planting in an effort to obtain uniform distribution of honey bee pollinators. Honey bees are social insects and have methods of communicating so that the majority of the foraging honey bees are directed to the richest sources of nectar and pollen as soon as such sources are discovered. Some of the commercial blueberry varieties secrete more readily than others and these varieties will be most attractive to the honey bee. Where problem varieties exist in a planting, concentration of the colonies of honey bees in the problem block may help to flood the area with foraging honey bees and increase the berry set.

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

Cranberry Weevil: About 37% of tray samples for cranberry weevil have been positive, but only 5% have been over the threshold of 5/bush. Almost all of the positive samples have been at the wooded edges. Several samples were done while raining on 4/8 while temps were about 45 degrees that were near or above threshold. Warmer temperatures will bring out more weevil activity. Make sure to check your fields, especially along wooded borders.

Spanworms and Other Leps: About 3% of samples have been positive for worms. None of the levels were near the threshold of 1/100 clusters. This is just the start of Lep activity, and more is expected as bloom develops. However, sprays are seldom needed.

Plum Curculio: As of Monday, no PC activity has been noted.

Thrips: Based on our “Thrips Activity Predictions” (http://benedick.rutgers.edu/Blueberryweather/ddcalc2.php), so far thrips have accumulated a total of 119.5 degree-days (see Figure on next page). Based on our multi-year experiments, thrips require approx. 380-400 degree-days to reach 10% activity (Rodriguez-Saona, C.R., S. Polavarapu, J.D. Barry, D. Polk, R. Jornsten, P.V. Oudemans, O.E. Liburd. 2010. Color preference, seasonality, spatial distribution and species composition of thrips (Thysanoptera: Thripidae) in northern highbush blueberries. Crop Protection 29: 1331-1340). Thus, no thrips activity is expected this week.
Calculated Degree Days

Station: Hammonton
Year: 2011  Day:101  Biofix:23  Threshold:40

Cumulative Degree Days: 377.17
Daily Temperature(°F):  High- 80.9  Low- 46.5  Average- 66.2
Daily Rainfall(in.):  0
Yearly Rainfall(in.):  5.54

Data based blueberry predictions

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Data based blueberry predictions using Nation Weather Service temperature predictions for the next 6 days

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Thrips Activity Predictions
Thrips degree day total: 119.47
Predicted Percent Thrips Emergence: 0

10% emergence not expected in the next 6 days.

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Blueberries will start blooming next week and mummy berry may need to be managed. Remember scouting for mummy berry should precede any decision to spray. Scout for open cups in wet areas of the fields and for strikes in the areas around open cups. This disease has been very scarce during the past few years, but that is not a reason to ignore it! There is still time to spray for Phomopsis twig blight. Applications of Indar would be beneficial during this pre-bloom period.

A. Immediate pre-bloom (approx. 5-7 days until bloom). Primary mummy strike on an inflorescence bud (B) and a leaf shoot (C).

An example of Phomopsis Twig Blight taken during the pre-bloom period