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

<table>
<thead>
<tr>
<th>PEST/DISEASE</th>
<th>WEEK OF June 6</th>
<th>WEEK OF JUNE 13</th>
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<tbody>
<tr>
<td>GROWTH STAGE</td>
<td>FRUIT DEVELOPMENT</td>
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<tr>
<td>Anthracnose</td>
<td>Avoid spraying Dukes before first harvest</td>
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<tr>
<td>Stem Blight</td>
<td>Scout for symptoms and remove infected canes</td>
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<tr>
<td>Berry Drop</td>
<td>Scout for symptoms and report to IPM program</td>
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<tr>
<td>Blueberry Maggot</td>
<td>Monitor and treat if needed.</td>
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<tr>
<td>Assail, Provado, Imidan, Malathion, Diazinon, Asana, Brigade, Lannate</td>
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<tr>
<td>Putnam Scale</td>
<td>Scout and treat if crawlers are present or note where present and wait until 2nd generation in August.</td>
<td>Scout or record places of infestation.</td>
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<td>Esteem or Diazinon</td>
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<tr>
<td>Oriental Beetle</td>
<td>Monitor and treat infested areas along planted row now through post harvest, but before the end of July (7 day PHI).</td>
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<tr>
<td>Admire Pro or generic</td>
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<tr>
<td>Aphids</td>
<td>Scout and treat if over 10% of terminals are infested with live aphids.</td>
<td>Scout and treat if populations are high</td>
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<td>Lannate (low populations), Imidacloprid (e.g. Provado), Actara, or Assail</td>
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<tr>
<td>Cranberry Fruitworm</td>
<td>Should not be an issue and should already be treated.</td>
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CULTURE
Dr. Gary C. Pavlis, Ph.D.
Atlantic County Agricultural Agent

June Symptoms: As blueberry harvest is almost upon us I am getting numerous calls from growers who are noticing plants that are not looking normal. This is the typical time for various symptoms to show up because the plant is actively trying to ripen the fruit load that has set. This process takes a tremendous amount of nutrients and water from the plant. Actually, nutrients and water that are taken up from the soil go to the fruit first and if there is a surplus, it goes to nurture the plant. As a result, if there are any problems such as root rot, root damage due to grubs, nutrient deficiencies, or a lack of roots due to a hard pan that has restricted root growth, the plants will often not be able to push out leaves and in fact, the developing fruit may start to shrivel. Extreme heat will bring out these symptoms even faster because the plant is further stressed. Visits to farms the last few days have revealed plants that are definitely stressed. For the most part, many do not have leaves but have a heavy load of fruit. I have mentioned this symptom in this newsletter before. This symptom is almost always due to a root problem. In most cases it is due to grubs. Watch this newsletter for timing of grub control. To save a plant with no leaves and a heavy fruit load three things must be done, 1. strip all the fruit off, 2. keep the plant well watered as it has a low percentage of functioning roots, 3. control the grubs.

The second most numerous symptom I am seeing is stem blight. One or more canes in a plant suddenly die with all the leaves turning brown but still hanging on to the plant. Again the plant is under the stress of ripening the fruit load with increasing temperatures and the canes are infected with this disease. As a result they shut down and die quite rapidly. Growers need to stay on top of pruning these canes out. If they don’t the disease moves down into the crown and kills the entire plant.
I also need to stress to growers that when planting a new field, a deep furrow needs to be dug in the planting row. There are numerous places in Atlantic and Burlington Counties where there is a hard pan at a depth of 12-16 inches. The new plant will often be fine for the first few years if this hard pan wasn’t broken up but when the first full crop is set, the plant will collapse due to an insufficient root system. There is no real easy way to fix this. Proper site preparation before planting is the best method to prevent later disaster.

Sincerely,

GARY C. PAVLIS
Atlantic County Agricultural Agent

Editor - Blueberry Bulletin
GP/slp

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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

Blueberry Maggot: The first blueberry maggot adult fly was found in the Pemberton area on an organic farm on Tuesday June 7. Since this is a high, unsprayed population, the first catch is somewhat biased. However, it is the first catch in the state. Therefore, if you are exporting to Canada, and you are on a calendar based spray program, then maggot flies must be treated within 10 days of the notification of first catch. If you are on a trap based program, then you can wait until you get a first catch on your farm, and then treat within 5 days of that capture.
**Aphids:** Scouting shows that 61% of shoot samples were infested with aphids and 14% have exceeded the 10% infestation level. These levels are similar to last week; however, the most recent scouting on June 6 indicates higher populations and reproduction going on in lower young shoots. Some locations may experience a sharp increase over the next week unless the upcoming heat wave serves to help reduce populations.

**Putnam Scale:** About 8% of fruit samples are showing some level of scale infestation, which should increase as the fruit colors. Initial crawler trap levels were noted to be high in some locations for the week ending June 4. Growers who have scale populations should treat now if they have not already done so, or wait until the second generation of crawlers in August.

**Oriental Beetle (OB):** OB adults are starting to fly but none have been seen around the bushes as yet.

*Life cycle.* OB completes a single generation per year. Adults (Picture 1) start to emerge in early June, and flight peaks in early July. Females lay eggs in the soil at the base of bushes. Most larvae reach first and second instars by the end of July. Third-instars (Picture 2) appear by the end of August, they remain in the soil during winter, resume feeding the following spring, and enter the pre-pupal stage in late May.

**Monitoring.** Japanese beetle sex pheromone traps (Trécé, Adair, OK), baited with septa lures containing the sex pheromone are used to monitor OB populations and initiation of male flight (Picture 3).

**Control.** Admire Pro (imidacloprid) (4.6 lb ai/gal) is recommended to manage OB grubs infesting blueberries in New Jersey. Other formulations are also available in generic brands. Most of these are 2 lb ai/gal. These include Alias, Nuprid, Couraze, and others. Imidacloprid is most effective if targeted against early instar grubs. It should be applied in June to mid-July, at least 7 days before the first picking, or applied as a post harvest material. Grubs should be targeted at their
youngest stage or as they hatch and are at the 1st
and 2nd instars, and while still close to the soil
surface. Imidacloprid has little effect on 3rd instars
and older larvae. Older 3rd instars start to appear
by early to mid August. Therefore, applications
should be made well in advance of that date.
Applications will degrade if exposed to the sun.
Therefore, imidacloprid should be immediately
irrigated into the soil to form a layer of insecticide
just below the soil surface. Imidacloprid has a long
residual activity (>100 days) as long as the
insecticide is not exposed directly to the sun.
Applications for early varieties like Weymouth can
be made immediately after the last picking. If
Duke picks by the 3rd week of June, then
application should be conducted during the 2nd
week of June or after harvest, between mid to the
end of July. Applications for Bluecrop are
recommended 7 days before the first picking, in
late June or early July. Similarly, applications for
late season varieties like Elliott should be
conducted no later than end of July. Imidacloprid
is most effective when applied as eggs hatch and
grubs are still near the soil surface. Please read
and follow all the conditions and restrictions on the
container label for these insecticides. Remember
to irrigate the field with at least .5 to 1” of water
immediately after application. If the soil is dry,
then also water just previous to application. Begin
applications late in the evening hours because this
insecticide is sensitive to breakdown by UV
radiation. No more than one application of Admire
Pro can be used per season. However, Admire Pro
and Provado (and other generics) may be used in
the same field as long as the total a.i. applied does
not exceed 0.5 lb/A.

Cranberry Fruitworm (CBFW) and Fruitworm
Injury: Trap levels have come down at most
farms and thus far no fruit injury has been seen. A
small amount of Cherry Fruit worm damage has
been noted in both Atlantic and Burlington county.

Brown Marmorated Stink Bug (BMSB): A total
of 4 BMSB were seen in blueberries this week. We
had only 2% of our samples with BMSB present in
beating trays and 3 minute timed counts. No injury
has been seen in fruit or foliage. Our most active
site has been in a Hammonton Duke field with
plenty of both ripening and green fruit. During this
last week the insects seem to have moved on.

Plum Curculio (PC): Only 5% of tray samples
have caught PC, and again most of these have been
at organic farms. About 50% of fruit samples are
showing some level of PC egg scars. None of the
scars have been fresh, even at organic sites. If
adequate post bloom insecticides had been applied
up to late May there is a good chance that all or
most of the infested berries will drop before
harvest.

Cranberry Weevil (CBW): This pest is still with
us and as last report mentioned is feeding on
foliage to a small extent and on occasion has been
seen feeding on fruit. This activity has been seen
at only 2 locations and in each case the fruit was
ripe and may have been injured originally by some
other means such as broken skin due to physical
damage.

Leafrollers and Other Leps: Sampling indicates
that 9% of tray and shoot samples are positive for
low levels of larvae including leaf miner larvae.
None of levels seen has been significant and no
pattern of worm fruit infestation has been seen in
the field.

Mealy Bugs and Ants: Several farms were seen
recently with high levels of surface ant activity and
associated mealy bug infestation on plant roots.
One site was noted to have many weak plants but
no sign of surface ant activity. At this site roots of
1 bush were checked and noted to have significant
mealy bug infestations. In order to evaluate your
need for ant bait digging is required.

Disease: Several farms are showing signs of
Phomopsis infections, and the mummy berry fruit
infections were noted on 6/6 in a block of Early
Blue.
### Blueberry Trap Counts – Atlantic County

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<th>RBLR</th>
<th>OBLR</th>
<th>SNLH</th>
<th>Or. Beetle</th>
<th>BBM</th>
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