

**RUTGERS**

New Jersey Agricultural  
Experiment Station

## *The BLUEBERRY BULLETIN*

*A Weekly Update to Growers*

*Dr. Gary C. Pavlis, County Agricultural Agent*

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**May 5, 2009**

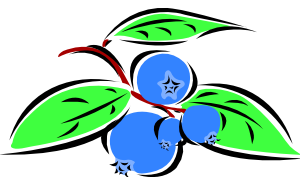
**Vol. XXV, No. 6**

*At a glance. Insect and disease problems that should be considered this week.*

| PEST/DISEASE   | WEEK OF MAY 4  | WEEK OF MAY 11   |
|--|--|--|
| <b>Anthracnose</b><br>Abound or Ziram                          | Applications are critical at this time   | Continue anthracnose schedule on susceptible cultivars.  |
| <b>Botrytis</b><br>Elevate, Captevate,<br>Switch or Pristine   | Increasing threat. Consider protecting susceptible cultivars   | Continue to monitor pollination. If cool, wet conditions persist the disease will start to develop |
| <b>Gypsy moth,</b><br>Leafrollers, spanworms<br>B.t., Intrepid | Use pheromone traps to monitor adult flight.<br>Scout for larvae.<br>Treat if over 1 larva/100 clusters. | Continue scouting for larvae. Use same threshold.  |

\*\*\*\*\***BLUEBERRY TWILIGHT**\*\*\*\*\*

**Thursday, May 28<sup>th</sup> @ 5:30 pm**  
**Atlantic Blueberry Company**  
**7201 Weymouth Rd.**  
**Hammonton, NJ 08037**  
**For directions call 609/561-8600**



**Culture:**

*Dr. Gary C. Pavlis*

*County Agricultural Agent*

**Pollination:** Unfortunately not all of the visitations to blueberry flowers by bees result in pollination. Pollen must be transferred from some parts of the bee's body, usually the head to the tip of the pistil (stigma) in order to achieve pollination. There are three ways in which honeybees "cheat" the grower by not earning their rental fee. 1) Acquire nectar by feeding through hole in blossom made by a carpenter bee. 2) The distance from the edge of a flower petal to pistil is very wide, as in Earliblue. The bee can stick its tongue down and get the nectar without touching the pistil. 3) The bee does not thrust through the open end but gets nectar through the bottom - very important in Bluecrop and Jersey. In some years such a high percentage of the bees may work through the bottom of the corolla that

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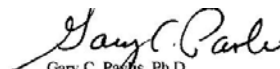
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the crop can be significantly reduced. Bees develop this bad habit mostly on Jerseys and Bluecrop. The probable reason is that both of these varieties can produce small seedless berries without pollination (parthenocarpy). These parthenocarpy berries begin to develop shortly after the flowers open and once it starts the corolla becomes loose at the base after a few days, enabling the bee to secure its nectar through the loose juncture of the corolla and ovary. Since the honeybees usually select older flowers which have more nectar it enables the younger ones to start the parthenocarpic process which does not occur once the flower is pollinated. The solution may be to use higher concentrations of bee hives.

The higher numbers of bees per bush forces them to accept younger flowers with the result that more berries are developed from bee pollination than by parthenocarpy.

Watch this newsletter for a description of signs of poor pollination.

Sincerely,



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

*Editor – Blueberry Bulletin*  
*Blueberry Bulletin – Editor*  
*GP/sp*

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## **INSECTS**

*Dr. Cesar Rodriguez-Saona,*

*Extension Specialist in Blueberry Entomology, Rutgers University*

*Mr. Dean Polk, IPM Agent – Fruit*

**Cranberry Weevil (CBW):** About 36% of samples were positive for weevil adults and 3% were found to be over threshold. As expected, this is a decrease since last week. While they still may be laying eggs, populations generally decrease during bloom. However, during the past 2 seasons this pest has returned in June to feed on foliage.

**Gypsy Moth Larvae:** The first larvae were seen in blueberry on April 27 in Atlantic County. About 60% of tray samples have been positive for larvae while 11% have been beyond the level of 1/100 clusters. The majority has been 1<sup>st</sup> instars, and very little feeding damage has been seen, partially due to the small size of the larvae. These will get bigger. In one planting with a significant infestation, feeding injury was evident. Growers are reminded to check young fields often since damage can be much more pronounced on young bushes.

**Plum Curculio (PC):** The first adult was seen on April 24 in Burlington County. Since then 8% of tray samples have been positive for PC -

most of these were found at one farm. There are spotty areas in both Atlantic and Burlington Counties where PC can be found, even at this early stage prior to fruit set. Adults have been seen feeding on flower petals and other flower parts. There is no registered control that can be used at this time.

*Life history.* In New Jersey, PC completes a single generation a year. This insect overwinters as an adult in leaf litter. Adults become active during bloom and feed on young fruit just after bloom, causing feeding scars. Recently, we noticed that in the absence of fruit adults feed on flowers. Females lay eggs in the fruit causing crescent-shaped oviposition scars (see Figure). White maggot-like larvae develop inside the fruit (one larva per fruit). Feeding by the larvae causes fruit to develop prematurely and fall off the bush. Mature larvae exit the fruit to pupate in the ground, and become an adult in July and August.

*Monitoring and Control.* To monitor PC populations, scout for the semi-circular scars on

the fruit. Sampling should be biased towards field edges or infields that border woods and hedgerows. PC infestations are more common in weedy fields and those under sod culture. This pest is more of a problem on early maturing varieties. No threshold has been established, so treatment is mainly based on past history and an estimate of damage to fruit. Control methods target the adult stage. Although adults can be present during bloom,

no chemical controls are recommended at that time. Chemical controls should be applied soon after bees are removed. Control options include Danitol 2.4EC at 10.6 to 16 fl oz, Diazinon 50W at 2 lb/A, Guthion 50WP at 1 to 1.5 lb/A, Guthion 2L at 2 to 3 pt/A, and Imidan 70WSB at 1.33 lb/A.

**Lady Beetles** have been present at several sites. These beneficial insects are coming out from overwintering sites and are looking for soft bodies prey, probably a few aphids and young caterpillar larvae.



**Figure shows an adult plum curculio and the crescent-shaped scar on fruit caused during oviposition**

***Blueberry Trap Counts – Atlantic County***

| Week Ending | CBFW | RBLR | OBLR | SNLH | Or. Beetle | BBM |
|-------------|------|------|------|------|------------|-----|
| 4/5         |      | 19.9 |      |      |            |     |
| 4/12        |      | 55.1 |      |      |            |     |
| 4/19        |      | 72.0 |      |      |            |     |
| 4/25        |      | 69.4 |      |      |            |     |
| 5/2         |      | 71.6 |      |      |            |     |

***Blueberry Trap Counts – Burlington County***

| Week Ending | CBFW | RBLR | OBLR | SNLH | Or. Beetle | BBM |
|-------------|------|------|------|------|------------|-----|
| 4/5         |      | 9.3  |      |      |            |     |
| 4/12        |      | 22.6 |      |      |            |     |
| 4/19        |      | 19.2 |      |      |            |     |
| 4/25        |      | 25.1 |      |      |            |     |
| 5/2         |      | 38.0 |      |      |            |     |

**Diseases**

*By Peter V. Oudemans, Ph.D.  
Extension Specialist*

**KEY POINTS!!!!**

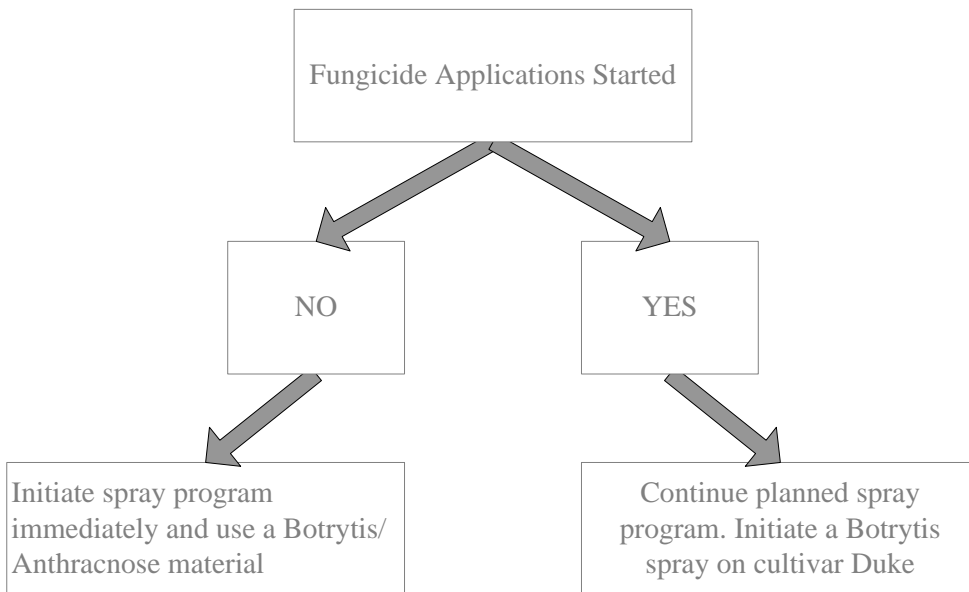
You should be scouting fields for the following issues:

1. Pollination. Are the blossoms beginning to drop? Are dead or dying blossoms dropping to the ground. If your answer is

yes to these questions the chance of Botrytis is low. If blossoms are hanging on and getting attached to developing fruit or leaves the chance of Botrytis is high. All dead or dying blossoms represent an entry point for Botrytis.

2. Scorch. Scorch symptoms are beginning to show. Flag bushes for removal.
3. Phytophthora root rot infested areas should be treated now. Look for stunted bushes with poor set. Have them tested for Phytophthora infection.

**Recommended Blueberry Disease Control  
May 6-9, 2009**



| Product   | Active Ingredients           | Botrytis        | Anthracnose     |
|---|------------------------------|-----------------|-----------------|
| Abound  | Azoxystrobin                 | +               | +++             |
| Bravo1  | Chlorothalonil               | Not recommended | Not recommended |
| Cabrio  | Pyraclostrobin               | +               | +++             |
| Captan  | Captan                       | +               | ++              |
| Captevate   | Fenhexamid<br>Captan         | +++<br>+        | -<br>+          |
| Elevate   | Fenhexamid                   | +++             | -               |
| Indar   | Fenbuconazole                | +               | -               |
| Omega   | Fluazinim                    | ?               | +++             |
| Pristine  | Pyraclostrobin<br>Boscalid   | +<br>+++        | +++<br>-        |
| Switch  | Cyprodinil<br>Fludioxinil    | +++             | ++              |
| Ziram   | Zinc dimethyldithiocarbamate | +               | +++             |
| <p>1 Bravo can have phytotoxic effects on bloom and has a 42 day PHI. For a June 15 harvest, applications cannot be made after May 3 but you should always build in a margin of safety. Based on historical phenology records bloom in Atlantic Co. begins from mid- April - beginning of May.</p> <p>- indicates no effect; + suppression only, ++ moderate control, +++ excellent control, ? currently untested</p> |                              |                 |                 |