

RUTGERS

New Jersey Agricultural
Experiment Station

The BLUEBERRY BULLETIN

A Weekly Update to Growers

Dr. Gary C. Pavlis, County Agricultural Agent

6260 Old Harding Highway, NJ 08330

Phone: 609/625-0056 Fax: 609/625-3646 Email: Hpavlis@njaes.rutgers.edu

May 11, 2009

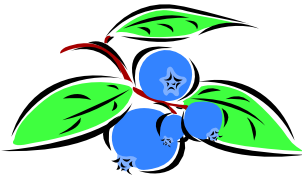
Vol. XXV, No. 7

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

PEST/DISEASE	WEEK OF MAY 11	WEEK OF MAY 18 – If Bees Are Removed
Anthracnose Abound or Ziram	Applications continue to be critical	Continue anthracnose schedule on susceptible cultivars.
Botrytis Elevate, Captevate, Switch or Pristine	No longer a threat on cultivars where fruit is set and blossoms shed	No longer a threat
Gypsy moth, Leafrollers, spanworms B.t., Intrepid	Use pheromone traps to monitor adult flight. Scout for larvae. Treat if over 1 larva/100 clusters.	Continue scouting for larvae. Use same threshold. May treat with Lannate if bees are removed.
Plum Curculio Guthion, Imidan, Diazinon, High rates of Danitol or Asana	Continue scouting to identify hot spots.	Treat if bees are removed

*******BLUEBERRY TWILIGHT*******

Thursday, May 28th @ 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

Growers have asked me for some guidelines for fertigrating blueberries. As you may be aware, our research in New Jersey has shown that fertilizing blueberries a little at a time through the trickle system has shown to be very beneficial. Increases in yield have been seen each year of the research. In addition, increases in fruit firmness have often been seen. Thanks is given to Mary Beth Sorrentino, USDA-CSRS for some of the technical information in this article.

Over the years the following guidelines have been developed:

1. Determine the amount of Nitrogen required/acre/year for each field. Total N should be based on leaf analysis the year before however 60# of Nitrogen/A is a good base recommendation for mature

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

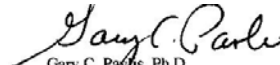
Cooperating Agencies: Rutgers, The State University of New Jersey; U.S. Department of Agriculture; and County Boards of Chosen Freeholders. The U.S. Department of Agriculture (USDA) prohibits discrimination in all programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Rutgers Cooperative Research & Extension is an Equal Opportunity Program Provider and Employer.

- plants if a leaf analysis has not been conducted.
2. Multiply total acres to be fertigated by #/A and convert to total gallons for the season.
 3. Fertigation period is 6-8 weeks, starting at ¾ bloom. Fertigate once a week for 1-2 hours during the normal irrigation schedule. Run irrigation a minimum of ½ hour before and ½ hour after fertigation. If travel time from the injection point to the final application point is longer, allow for one hour before and after fertigation time of travel. This will ensure application uniformity to the furthest emitter within the zone. As a rule of thumb, for a scheduled irrigation, irrigate at least 3-4 hours during a 1-2 hour fertigation. Using a 1gph emitter, irrigate 4-6 hours every 3 days, with a .5 gph emitter, irrigate 8-12 hours every 3 days. This is based on no rainfall and ET rates of .2”-.26”/day.
 4. Install tensiometers to monitor soil moisture within the 12”-18” root zone depth. For loamy sands and sandy loams

irrigate when readings are 20-30 CB on the tensiometers.

5. This will supply needed water and fertilizer to the root zones. Injection pump should be sized for maximum acreage/zone that you plan to irrigate/fertigate at one time (2 hour injection time, for a 4 hour irrigation per zone). Example- a 10 acre drip system at 60# N requirement/acre will need 600 gallons of liquid 10-10-10. If injection is scheduled for once a week for 8 weeks, 75 gph injection pump is recommended for a one hour injection period. If you inject for 2 hours, the rate is lower (37.5 gph injection rate). If zones are over 10 acres, plan for between 50-100 gph injection rate. A lower injection rate can be used with a longer fertigation/irrigation period.

Sincerely,



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

Editor – Blueberry Bulletin
Blueberry Bulletin – Editor
GP/sp

INSECTS

*Dr. Cesar Rodriguez-Saona,
Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit*

INSECTS:

Cranberry Weevil (CBW): About 18% of samples were positive for weevil adults and 1% of these samples were found to be over threshold. As expected, this is again a decrease since last week. This insect is no longer a management target at this time.

Leafrollers and Other Leps: Most larvae that are being found are green fruitworm larvae. These are present in 9% of our samples. Levels seen are very low, below treatment thresholds.

Gypsy Moth Larvae: The overall gypsy moth population in blueberry fields is low, especially given the last couple of years. However, larvae

are present in 66% of our samples, with 11% requiring treatment. Many of the areas having high populations in 2008 have only a very few larvae this year. Growers should be particularly cautious with young fields, especially if near the woods. We have still seen gypsy moth larvae in these fields needing treatment. Since gypsy moth seems to have more of an affect on young plantings, very few should be tolerated.

Cranberry Fruitworm (CBFW): The first adults were trapped on May 8 in the Hammonton area. This insect will continue to emerge over the next several weeks. If your

farm experiences high CBFW populations, then 2 sprays may be needed, with the first one coming close to the peak flight; if using 2 sprays, then the first early insecticide should be an IGR such as Intrepid, Confirm, or Esteem.

Life Cycle: CBFW overwinters as a fully-grown larva within a cocoon made of silk and soil particles (hibernaculum). Pupation occurs during the early spring and moths begin to emerge during the second-third weeks of May (this year a few adults were caught at the end of last week). Male moths emerge 3-4 days earlier than females. Adults are brownish gray with a pair of white markings on each forewing. The eggs are pale-green, flat, and are laid singly, mostly along the inside rim of the calyx cup. Eggs hatch in 5-7 days and the newly emerged larva is pale yellowish-green. Upon hatching, larvae bore into the fruit usually near the junction of stem and berry. The larva remains inside a fruit until its content is consumed, and then it moves to another fruit. A larva may feed on as many as 5-8 berries. Infested berries are contaminated with larval excrement which can be seen near the entrance hole. CBFW infestations can be recognized by the presence of webblings filled with excrement in berries. Infested fruit prematurely drop. Larvae drop to the ground under blueberry plants beginning the third week of June and build a cocoon. There is one generation a year.

Aphids: The first aphids were seen on May 11. Aphid populations will gradually build up from late May through June. The first post pollination insecticide usually DOES NOT have to be an aphicide, but should be targeted for CBFW. If aphid populations are high, then a post pollination spray for aphids is justified.

Plum Curculio (PC): Slightly fewer PC adults are being seen since last week, but they are still present in about 8% of samples. We average about 0.12 adults per sample. Since PC seems to be widespread, but at low levels, this may be a pest to control in many fields when the bees are taken out.

First Post-Pollination Insecticide Options:

Growers who wish to use selective insecticides, especially for the control of Lepidopteran pests, are encouraged to do so. These compounds are

safer to humans and the environment. Confirm 2F and Intrepid 2F are insect growth regulators (IGR) with activity only against caterpillars and have no effect on any other insects. Esteem is also an IGR that is also effective on cranberry fruitworm and scale (at a different timing). IGRs are safe to bees and thus can be used during bloom. Delegate WG are insecticides with activity against caterpillars and some toxicity to thrips. Assail is a new neonicotinoid insecticide active against cranberry fruitworm, aphids, and thrips. Delegate and Assail should be used after bees are removed.

Here are few guidelines you may consider for choosing appropriate insecticides for the first post-bloom application:

- 1) If **cranberry fruitworm** is your only concern, growers can use Confirm, Intrepid, Esteem, Delegate, or Assail (see recommendations above for timing). IGRs (Intrepid or Esteem) would be a good choice for a first application during bloom. The reason that IGRs should be used for the 1st or “early” spray is that Intrepid and Esteem are ovicidal and larvicidal, so to get maximum benefit they should contact the egg before hatch. If a 2nd application is needed (after bees are removed), Delegate or Assail are both good choices.
- 2) If caterpillars other than cranberry fruitworm (i.e., leafminers) and **thrips** are your primary targets, you may apply SpinTor or Lannate. If cranberry fruitworm is your target along with thrips, then your choice should be Lannate. Lannate will also control aphids (see below). SpinTor may not be effective against cranberry fruitworm because of short residual toxicity and the limited feeding of the cranberry fruitworm larva prior to entering the fruit.
- 3) If **aphids** are your primary concern, and you do not have major caterpillar pressure or plum curculio at this time, then use Assail, Provado, or Actara in your first post-pollination application (May until early June). Assail will also

control cranberry fruitworm and thrips. These compounds are very effective against sucking insects. Alternatively you may use a broad-spectrum insecticide such as Diazinon or Lannate. These broad-spectrum insecticides will also control caterpillars and other pests; however, Diazinon is weak on gypsy moth, while Lannate is good against gypsy moth. There are a few thrips and aphids being seen as of this writing.

- 4) If you want to use a broad-spectrum material in late May and early June (for caterpillars, aphids, leafhoppers, thrips, **plum curculio**, etc.), you should choose one of Diazinon, Guthion, Lannate, Danitol, or Imidan. Imidan will control all pests normally targeted at that time, but will not control aphids. Pyrethroids can also be used but are generally weak on aphids, but control

most other pests (as listed on the label): Asana – cranberry fruitworm, Japanese beetle, leafhoppers, and blueberry maggot; Danitol – plum curculio, cranberry fruitworm, Japanese beetle, obliquebanded leafroller, and blueberry maggot. While the pyrethroids will control plum curculio, high rates need to be used to achieve control. Pyrethroid insecticides are very toxic to natural enemies, and thus will disrupt biological control, especially aphid predators and parasitoids.

- 5) Lannate is not labeled in Canada and, while it has the same tolerance on fruit as in the U.S., use should be minimized or avoided if exporting berries.

Disease: No Botrytis of Mummy Berry strikes have been noted on commercial farms. Some Mummy Berry is present in some organic fields.

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				
5/9	.009	43.6				

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				
5/9	.09	16.2				

Diseases

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

Blueberries are mostly out of bloom. Mummy berry and Phomopsis twig blight, are no longer active. Fields with symptoms of these diseases should be confirmed and targeted for management next season. To evaluate for mummy berry infections, the berries can be

sliced open so that the ovaries are visible in cross section. Some or all of the locules of the infected fruit will be filled with a spongy white material that will eventually become the mummy. These will be visible by early June.

Healthy fruit will not have any of the white spongy material in the locules.

If Botrytis blossom blight is present in your field it may still spread via infected plant material. If this is the case a botrytis material may be warranted.

For anthracnose management protectant sprays should be the major emphasis now. Ziram, Captan, Cabrio, or Abound may

be used to protect the developing fruit. Ziram will provide a longer residual activity and therefore the interval between applications can be stretched to 14-days. However, Ziram has a 14-day PHI and it covers the fruit with a whitish residue that is not appealing to consumers. My recommendation is to leave a 20-30-day PHI for Ziram to time to allow the residue to dissipate.

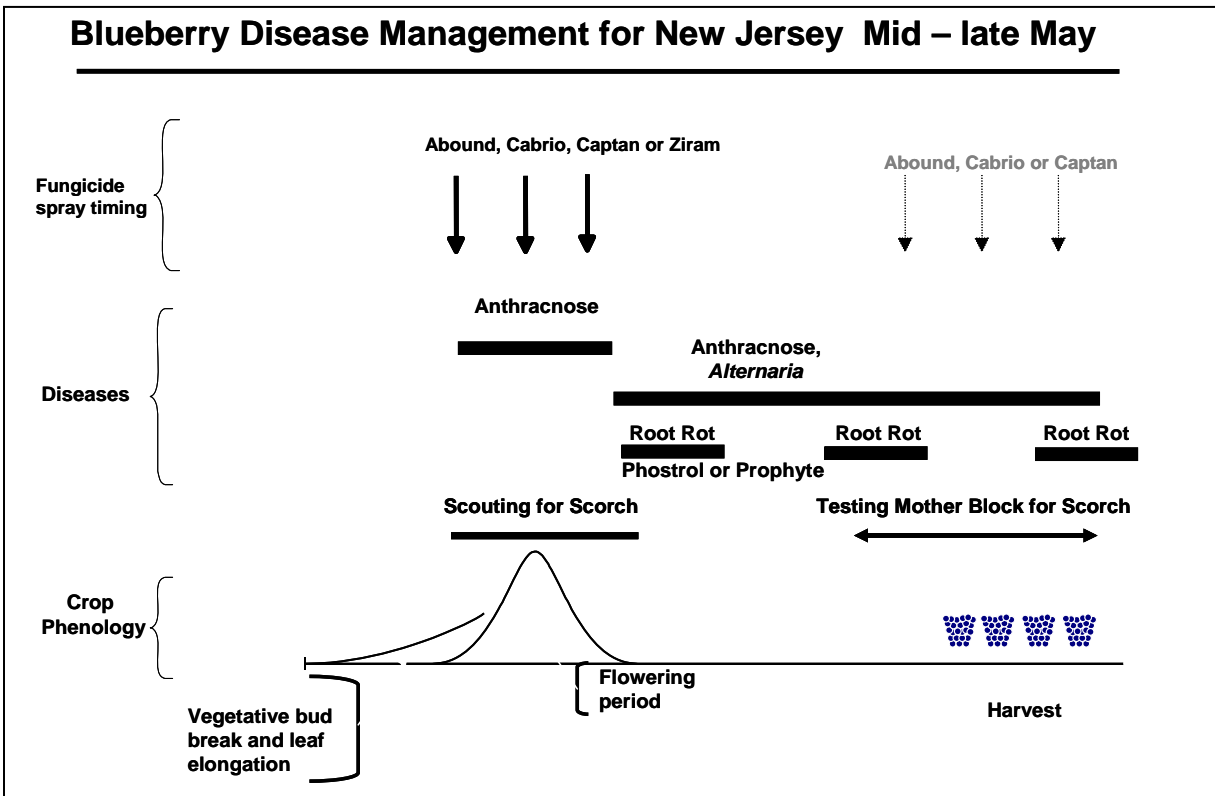


Fig 1. Disease management considerations for mid-late May. Treatments and diseases that are in gray may be upcoming whereas those in black are current. Please remember to scout for diseases now.

Blueberry Scorch Virus

The symptoms of Blueberry Scorch have been rare this season. The infected bushes have not been cured; the disease is latent (symptoms are not appearing) but the virus can still be transmitted by aphids or via cuttings. Suspect plants should be tested and removed if found to be positive.

Stem Blight

Symptoms are beginning to appear now. Prune out dying branches and try to prevent the disease from entering the crown of the plant. Symptoms will continue to appear throughout the remainder of the season.

Phytophthora Root Rot

Symptoms are beginning to show. Get samples for testing to determine a course of action.

