

The Blueberry Bulletin

A Weekly Update to Growers

June 13, 2023

Vol. 39, No. 11



- ❖ Visit the Blueberry Bulletin webpage at njaes.rutgers.edu/blueberry-bulletin
- ❖ The 2022 Commercial Blueberry Pest Control Recommendations for New Jersey is available on njaes.rutgers.edu
- ❖ The Blueberry Bulletin will now be emailed to those who request it. We will no longer be mailing hard copies out. If you are not on our current list and would like to receive a copy, please call the office at (609) 625-0056.

BLUEBERRY CULTURE

Dr. Gary C. Pavlis, Ph.D

Atlantic County Agriculture Agent


Harvest has begun. In my visits over that past few weeks, growers have told me that yields are not what they used to be. And we all know that yield=money. Let's go over what it takes to maximize yield.

1. **Correct pruning methods** – an annual thinning out of older canes and cutting these canes out at **ground level** to stimulate new cane growth.
2. **Adequate pollination** – scrimping on the number of hives during bloom is a mistake. If your berries are small, which decreases yield, cut the berries open. There should be at least 15-20 seeds in each berry. If there isn't, poor pollination.
3. **pH** – 70% of NJ blueberry fields are below 4.5, and 25% are below 4.0. The correct range of pH for our blueberries is **4.5 to 5.0**. Draper requires 5.0 to 5.5. If your pH is too low, high yields are not possible.
4. **Optimum nutrient levels** – Our IPM program takes leaf samples in late July /early August to determine the nutrient levels of fields in the IPM program. If you in the program and have a deficiency, it needs to be fixed, if you are not in the program, take your own leaf samples at that time and get them analyzed. Every deficiency decreases yield.
5. **Timely application of sprays to control insects and diseases.** Consult the Rutgers Commercial Blueberry Pest Control Recommendations for details. Applications made at the wrong time or with the wrong chemical can be devastating.
6. **Efficient irrigation**- Blueberry fruit is 84% water. Blueberry plants under water stress during fruit maturation decreases yield. On average, blueberries require 2 inches of rain every 7 – 10 days.

There are numerous devices that measure soil water availability. Guessing when to apply water decreases yield.

7. **Soil health** – the soils in the Pinelands have high organic matter levels and this is where the high-bush blueberry evolved. IPM soil samples have shown that the organic matter level of most of our blueberry fields are now very low. If your soil is low, mulching is required to increase cane growth and plant vigor.
8. **Weeds** – I often have stated that every weed under the blueberry plant costs you a dollar. Now that may not be exactly correct but weeds rob the blueberry plant of water and nutrients, both of which the grower is paying for. A weedy field results in less cane growth and decreases yield. Efficient weed control is critical for maximum yields.

I didn't list everything needed for maximum yield but these are the most important factors. High yields can only be achieved if all of these factors are managed correctly.



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

PEST MANAGEMENT

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Ms. Carrie Mansue, Senior Program Coordinator

Lepidoptera larvae – leafrollers, spongy moth: The activity of lepidoptera larvae remains low across all 183 scouted fields throughout Atlantic and Burlington counties. They should no longer be a pest of concern.

Plum Curculio (PC): There is no PC activity. PC should no longer be a pest of concern.

Aphids: Aphid counts are similar to last week. Aphid colonies should have already been treated. If you have not done so already, consider treatment if greater than 10% of terminals are infested with live aphids. Please see previous newsletter article for treatment options.

Cranberry Fruitworm (CBFW) and Cherry Fruitworm (CFW) Traps: Average CBFW and CFW trap counts declined slightly compared to the previous week.

Spotted-wing Drosophila (SWD): SWD adults are active in both Burlington and Atlantic County. This is the main pest of concern through the ripening phase. SWD populations will increase as the season progresses, and become more of a challenge to control in later varieties. The strongest insecticides for SWD control

are the pyrethroids (Grp 3A), Imidan & Malathion (Grp 1B), Lannate (Grp 1A), Delegate & Entrust (Grp 5), and Exirel and Verdepryn (Grp 28). Please see last week's article on SWD insecticide rankings.

Oriental Beetle (OB): OB adults started to emerge and will continue to emerge throughout June and the first half of July. They will mate and lay eggs shortly after emergence. After the larvae hatch from eggs, they burrow down into the shallow root system. Imidacloprid (e.g., Admire Pro) needs to be applied so it is in the soil when young and newly hatching larvae are present. This would be now and any time before early July. There is a 7 day PHI for this material. Growers who do not wish to use imidacloprid can use mating disruption (see below). Mating disruption dispensers should have already been applied, but can still be effective if placed in the field over the next week.

Life cycle. OB completes a single generation per year. Adults (Figure 1) start to emerge in early June. 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 (Figure 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.



Figure 1. OB adult

Monitoring. To monitor OB populations and initiation of male flight, use Japanese beetle traps baited with septa lures containing the OB sex pheromone.

Control. Imidacloprid (active ingredient) is recommended to manage OB grubs infesting blueberries. Several formulations are available in generic brands; these include Admire Pro, 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. This insecticide has a long residual activity (>100 days) as long as it is not exposed directly to the sun. Please read and follow all the conditions and restrictions on 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.



Figure 2. OB 3rd instar

OB Mating Disruption. As an alternative to imidacloprid, we recommend the use of mating disruption for OB control. Dispensers (Figure 3), containing the OB sex pheromone, are now available to growers. These dispensers are being sold by AgBio:

Mr. Jan Meneley, Ph.D.
 AgBio Inc.
 9915 Raleigh St.
 Westminster, CO 80031
www.agbio-inc.com
 ph 303-469-9221
 fx 303-469-9598



Figure 3. OB dispensers

To use, simply attach the dispensers to a lower blueberry branch at a density of 20-40 dispensers per acre in a grid pattern, depending on the size of the area to be treated. Please see label for information on restrictions, spacing, timing, etc.

Insect Sampling Count Summary

	LR/Tray	PC/Tray	LR Infested Fruit	PC Infested Fruit
Average	0.002	0	0.002	0
High	0.1	0	0.2	0

Key: LR = Leafrollers, PC = Plum Curculio

	% LR Shoot Infestation	% Aphid Terminals
Average	0	4.2
High	0	32

This week in traps

	AC CFW	BC CFW	AC CBFW	BC CBFW
Average	1.33	0.5	1.6	1.75
High	5	2	14	4

Key: AC = Atlantic County, BC = Burlington County, CFW = Cherry Fruitworm, CBFW = Cranberry Fruitworm

	SWD AC	SWD BC	OB AC	OB BC	BBM AC	BBM BC
Average	0.818	0.4	73.61	18.88	0	0
High	3	2	675	108	0	0

Key: SWD = Spotted-wing Drosophila; O = Oriental Beetle; BBM = Blueberry Maggot