

The Blueberry Bulletin

A Weekly Update to Growers

July 18, 2023

Vol. 39, No. 16



- ❖ 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

Leaf Tissue Analysis: Readers of this newsletter are aware that fertilizer recommendations for blueberries are based on leaf analysis. We have found that there is no correlation between the soil analysis and the amount of nutrients that actually enter the blueberry plant. Soil analysis is useful to determine pH, and maintain pH in the proper range, 4.5 - 4.8. Thus leaf analysis is critical to maintain the blueberry plant in a healthy, efficient, productive condition.

Leaf tissue analysis is a way of determining the actual nutritional status of plants. It is an excellent and inexpensive way of finding out if your fertilization program is working or if changes need to be made. The analysis provides information on foliar N, P, K, Ca, Mg, Mn, Fe, Cu, B and Zn levels for the leaves sampled, a fact sheet on what the levels should be for these plant nutrients, and recommendations for corrective measures if needed. Leaf tissue analysis can help pinpoint the source of problems and determine what measures may be needed to ensure proper nutrition of the crop. Interpretation of tissue analysis is most accurate when the soil pH is within the proper range for blueberries, 4.5 - 4.8.

When to Sample: Sample healthy leaves during late July or early August.

How to Sample: Collect 30-50 leaves per sample. Leaves should be from the middle shoot, not old ones/not new ones. Sample different varieties separately, if possible. Collect leaves from as many bushes as possible in the sample area. Gently wash the leaves in tap water to rinse off soil or spray residue.

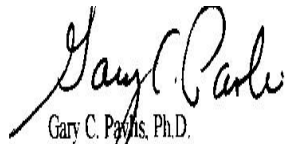
Allow the leaves to air dry until they are brittle before placing into a paper bag.

The following laboratories can be considered:

Agricultural Analytical Services Lab
The Pennsylvania State University
University Park, PA 16802
Phone # 814-863-0841 (Cost \$24.00)

MDS Harris
621 Rose Street
Lincoln, NE 68502
Phone # 402-437-4765

Agri-check, Inc.
P.O. Box 1350
Umatilla, OR 97882
Call Joe, Lab Manager at 541-922-4894 for
Plant Analysis Fee Schedule
Midwest Laboratories Inc (formerly A&L)
13611 B Street
Omaha, NE 68144
Phone # 402-334-7770
www.midwestlabs.com



Gary C. Payne, 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

Spotted-Wing Drosophila (SWD): SWD numbers on traps continue to increase across the 96 fields scouted in both Atlantic and Burlington counties. Adult populations continue to provide significant pressure, with trap counts showing similar pressure as the previous week. It is very important to stay on a 7 day schedule, and refresh insecticides if heavy storms cause wash-off. Also make sure to rotate insecticide types, or use different products with different IRAC mode of action classifications (i.e., organophosphates, carbamates, pyrethroids, spinosyns, and diamides).

As the adults continue to mate and lay eggs, higher populations of larvae will be present in dropped fruit and ultimately in ripening fruit if not adequately controlled. Importantly, make sure to target the bottom half of the bush as well as berries dropped on the ground, in addition to the tops of the plants. In a study, we found that early in the season SWD prefers to attack ripening fruit at the bottom of bushes; however, later in the season as more fruit are found on the ground, their preference shifts to attacking fruit on the ground (Figure 1). Thus, destroying fruit on the ground (sanitation) is an important cultural control practice. Infested fruit can be placed in plastic bags, sealed, and thrown in the trash. Solarizing fruit under clear plastic in the sunshine has also been successful in killing larvae in fruit. Adult flies are the most active during the early morning hours and at dusk. Therefore, applications of insecticide during the very early morning hours and twilight will be more effective than if applied during late morning to mid-day.

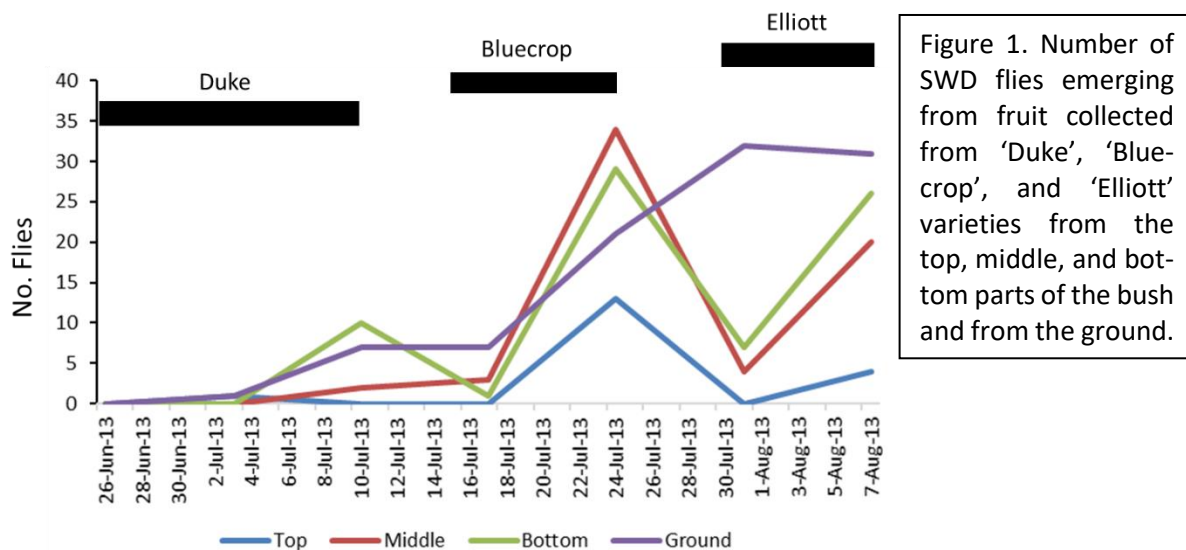


Figure 1. Number of SWD flies emerging from fruit collected from 'Duke', 'Bluecrop', and 'Elliott' varieties from the top, middle, and bottom parts of the bush and from the ground.

Aphids: Aphids are still being found but at lower levels than seen in the previous week. Percent of aphid-infested terminals was on average 4.05%, with a high of 58%.

Blueberry Maggot (BBM): Growers who are exporting to Canada should be covering with a BBM effective insecticide every 7 days. If you are no longer exporting, then your management should focus on SWD.

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and Boards of County Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Oriental Beetle (OB): OB trap counts remain high and have increased in Burlington County since last week.
Putnam Scale: Crawler traps will be placed next week and the second generation should be starting in the near future. Information on treatment options will be provided in future articles.

Sharp-nosed Leafhopper (SNLH): SNLH adults (Figure 2) from the 1st generation are still active now; however, insecticides are timed for the 2nd generation of adults, since these are the primary motile forms and spread the bulk of blueberry stunt disease. Thus, sprays are not needed at this time.

Life cycle – SNLH feeds and reproduce on blueberry, huckleberry, cranberry, and other related plants. SNLH feeding causes little direct damage but it transmits the phytoplasma that causes **stunt disease** in blueberries. They are small brown insects with a pointed head. SNLH picks up the disease while feeding on infested bushes and carries it to other plants in subsequent feedings. Usually only adults will carry the disease from plant to plant, since nymphs are wingless and can't fly. This insect completes two generations in New Jersey. Adults are abundant in the woods, where many alternative hosts are present, and may move to commercial blueberry fields in the spring. Eggs overwinter inside fallen leaves and hatch in mid-May. Nymphs complete 5 instars. Nymphs from the first generation reach adult stage in mid-June, while nymphs from the second generation reach adulthood in mid/late August. Adults move back to the woods in the fall. Monitoring these generations is critical for timing of control strategies.



Figure 2. Adult sharpnosed leafhoppers.

Monitoring and control – Adults (Figure 2) are monitored using yellow sticky traps. First generation SNLH is often controlled with sprays targeted against other pests such as plum curculio, aphids, cranberry fruitworm, and SWD. Treatment decisions for the 2nd generation should be based on individual population levels, as well as any history of stunt disease on your farm. Because adults disperse from woods, monitoring should be intensified in, and sprays should be directed to, the perimeter of fields to control migrants carrying the disease. Insecticides are usually applied just prior to peak flight, which will probably be sometime near the end of August to early September. If needed, we recommend use of Assail, Actara, imidacloprid (e.g. Admire Pro), Lannate, or Malathion. It is also important to remove all plants that show symptoms of stunt disease. Removal of bushes should be done after insecticide treatment to avoid movement of leafhoppers from infested to healthy plants, thereby facilitating spread of the disease.

Insect Sampling Count Summary

	LR Infested Fruit	PC Infested Fruit	Scale Infested Fruit	CBFW Infested Fruit	CFW Infested Fruit
Average	0.1	0	0.08	0	0
High	0	0	3.2	0	0

Key: LR = Leafrollers, PC = Plum Curculio; CFW = Cherry Fruitworm, CBFW = Cranberry Fruitworm

	% LR Shoot Infestation	% Aphid Infested Terminals
--	------------------------	----------------------------

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and Boards of County Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Average	0	4.05
High	0	58

This week in traps:

	SWD AC	SWD BC	OB AC	OB BC	BBM AC	BBM BC	SNLH AC	SNLH BC
Average	61	86	1837	2344	0.008	0.075	0.39	0.22
High	183	264	7425	10465	1	2	3	3
Key: SWD = Spotted-wing Drosophila; OB = Oriental Beetle; BBM = Blueberry Maggot; SNLH = Sharp-nosed Leafhopper								