

The Blueberry Bulletin

A Weekly Update to Growers

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- ❖ 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.

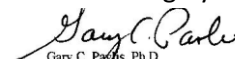
BLUEBERRY CULTURE

Dr. Gary C. Pavlis, Ph.D

Atlantic County Agriculture Agent

The blueberry season is over and all in all it was a pretty good season in spite of all the rain. During my travels to all the farms in the area I was reminded that many blueberry farms sell a small percentage of their crop retail to a loyal following of customers. I would like to make a suggestion with regard to this part of the market. It is well known to growers that we in New Jersey basically grow three varieties of blueberries, the "Duke", "Bluecrop", and "Elliott". "Duke" has many attributes such as high yields, late flowering, and firmness but as anyone knows, great flavor is not one of its greatest attributes. "Bluecrop" is highly adaptable to many soil types, yields well and its flavor is good. "Elliott", on the other hand, is a very good producer, it is firm, attractive, and quite anthracnose resistant but its flavor is mediocre at best. I was told long ago by a marketing exec that to ignore a segment of the market eventually will come back to bite you. It makes sense to provide the best blueberries possible to this small retail market by producing blueberries that are superior in flavor.

Most of these varieties are well known but not grown in New Jersey because they are not suited to mechanical harvesting, are not firm thus are not suitable for shipping, or are not high yielding. All of these factors are not important for that small retail market. The number one criteria for this market are flavor which is what these customers are looking for and will pay a premium price for. Varieties such as "Spartan" (very large fruit and early), "Ivanhoe" (incredible flavor, mid-season), "Chandler" (very large fruit and excellent flavor), "Herbert" (very large fruit with excellent flavor), "Darrow" (my favorite flavored blueberry and very large fruit), "Elizabeth" (considered by many to be the best flavored blueberry anywhere), and "Legacy" ("Elizabeth" is one of its parents thus excellent flavored and a release from USDA in New Jersey) are all great options for the retail market. I would go so far to say that these are the Gourmet varieties. A grower won't plant 100 acres of these varieties but a row of each will be highly appreciated by your clientele.


Gary C. Pavlis, 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

Scale traps: Scale traps have increased since last week. It is still time to treat if you have not done so. Diazinon and Esteem are the products of choice.

Sharp-nosed Leafhopper (SNLH) traps: Although SNLH have increased since the previous week, numbers are still low. We are still watching for a significant increase in the adult trap catch. While we saw a slight increase this past week, it is still not enough and too early to think about second generation SNLH treatments. If needed, treatment is usually recommended in the next few weeks. When treating for SNLH, use any of the sucking insect materials listed in the “2022 Commercial Blueberry Pest Control Recommendations for New Jersey.” Suggested materials include Diazinon, Imidan, and any neonicotinoid such as Assail, Actara, and Admire Pro. Pyrethroids are also labeled, but are slightly less effective.

Insect Sampling Count Summary

Week of	Scale		SNLH	
	Avg	Max	Avg	Max
8/21	64.125	300	0.16	1
8/14	50.3	200	0.05*	1*

SNLH = sharp-nosed leafhoppers; * = counts are for Burlington county only (Atlantic county were all zeros).

Private Applicators: NJDEP August Mailing of 2024 Invoices & Recertification Credit Status

Pat Hastings; Plant and Pest Advisory

The New Jersey Department of Environmental Protection has mailed out pesticide license credit status to applicator, operator, and dealer mailing addresses of record. If you have not received your notice please review “NJDEP Pesticide Licensing & Registrations – 2024 Pesticide License Renewal Information”

If you are a Private Pesticide Applicator with a license expiration of October 31, 2023, AND have accrued 8 CORE and 16 PP2 recertification credits, your mailing will include an invoice with a zero balance. There is no fee for Private applicators/Gov’t exempt license renewals. However, a paper license will not generate unless the “\$0.00” renewal invoice is processed. To process these invoices, use the “paying online” directions that are provided in the General Information section of the NJDEP announcement. Make sure to process your invoice online to ensure your license remains active. The NJDEP provides that delays in processing of licensing could lead to loss of certification status. If this occurs, the Applicator will need to pass the exams again to become certified again.

Once that is complete, you will be mailed your paper Private Pesticide Applicator License with a new expiration date of October 31, 2028.

An image of the paper invoice appears below. Notice that the title of the document is “Pesticide Licensing Invoice” and that red arrows and type highlight the three pieces of information needed from the invoice for online processing: 1) Invoice #; 2) Amount due: \$0.00; and 3) the license number.

When you receive your invoice, process your license renewal online by:

1. Go to www.pcpnj.org
2. Under the heading Online Payments and Reports, click on the link labelled “Pay For Your License Online”
3. Enter Invoice number (found on paper invoice; if you do not have the invoice number, online at Invoice Numbers for Unpaid License Invoices – Individuals)
4. Enter License number (make sure to capitalize any letters at the end of your license number)
5. Click “Continue” and follow prompts from there

Private Applicators who have NOT attended the recertification training to achieve the minimum number of recertification credits required [8 CORE and 16 PP2] will NOT receive an invoice for licensing in August. You will lose your license on October 31st unless you take the courses needed or retake the Private Pesticide Applicator Exam.

IMPORTANT: It is illegal for certified Private applicators to use or supervise use of pesticides without a license.

Private applicators receive an update of recertification status once a year. The “Recertification Update Form” will tell you when your 5 year period is up, how many units you have accumulated and how many more you need. If you are not eligible for recertification you will not receive this notice. Verification of your recertification credits can be done online throughout the year.

1. Click on this link <https://www.nj.gov/dep/enforcement/pcp/bpo.htm>
2. Scroll down to “Credits and Courses”
3. Click on link labeled “Check Your Credit & Course History-Commercial Applicator” or “Check Your Credit and Course History-Private Applicator”
4. Enter Requested information (license number with letter capitalized, and if prompted your birthdate including slashes, and last four digits of Social Security number)
5. Click OK

Private Applicators are encouraged to accumulate the requisite 8 CORE subject matter and 16 Private Part 2 (PP2) credits subject matter over the 5 years. NJDEP’s recertification credit cap for online training is of 25% total required credits [i.e., for Private applicators, 2 of the total 8 CORE and 4 of the total 16 PP2].

The license will be valid for a minimum of 5 years, at which point another \$0 invoice will generate if you have accrued the minimum recertification credits.

Please contact Rutgers NJAES Pesticide Safety Education Coordinator Pat Hastings for personal assistance to process your online your zero invoice. She can be contacted at 848-932-0176 or email at hastings@njaes.rutgers.edu.

If there are any questions on the certification and licensing program for Private Pesticide Applicators, please call the Pesticide Control Program at (609) 984-6568.

Soil Fertility from Non-Commercial Nutrient Sources

Joseph Heckman; August 21, 2023; Plant and Pest Advisory

All essential plant nutrients cycle through the ecosystem of soil, water, air, plant, microbe, and animal. Agronomic information about the composition and beneficial use of waste materials and how the nutrients can be recycled can help growers reduce the need to purchase soil fertility inputs. Many different types of non-commercial nutrient sources are available in New Jersey. Examples include horse manure with bedding, shade tree leaves, lawn clippings, wood chips, food waste, coffee grounds, eggshells, wood ash and more.

With 43,000 horses in New Jersey, there is an abundance of horse manure produced. One horse can produce about 65 pounds of manure plus bedding per day. The quantity of horse manure is substantial on a statewide basis. Unfortunately, sometimes horse manure goes to landfills when it should be used to build and sustain soil fertility.

The Soil Profile Newsletter 2023 issue posted at Rutgers NJAES explains how to build and maintain soil fertility harnessing the nutrient supplying ability of horse manure and many other types of non-commercial materials. The chemical composition and soil fertility value of each material is presented for beneficial use. Available on the web at Rutgers NJAES 'The Soil Profile': <https://njaes.rutgers.edu/soil-profile/pdfs/sp-v26.pdf>

Center for Produce Safety Annual Symposium

Wes Kline

The Center for Produce Safety (CPS) holds an annual symposium where researchers present findings from projects funded by CPS. The goal is to present results faster that may help the industry address food safety issues. I selected four summaries that may apply to the industry in New Jersey. There are fifteen summaries in total. If you would like to review the remainder or read a research report go to:

<https://www.centerforproducesafety.org>

Cleaning and sanitation of harvest equipment. The importance of cleaning and sanitation of harvest containers and equipment has become increasingly clear. However, a project reported at the Symposium [2023 Chen final report] underlines the importance of continued grower/harvester outreach and education. Machine harvest of blueberries has only recently become possible. This project involved a grower survey that found that only 70-75% clean and sanitize harvest equipment “regularly”, 3 % never perform this vital task and the rest were unaware of the need. Previous studies and outbreak investigations have taught the industry that surfaces on harvesting equipment and containers offer Lm and other microorganism’s niches to reside in and deposit biofilms that permits survival and subsequent cross-contamination of products unless effective, immediate, and verifiable cleaning and sanitation is performed at least daily. It is important for the industry to continually create cleaning and sanitation awareness across all sectors of the industry and leverage our accumulated knowledge on best practices.

Product testing – Preharvest, more samples, more mass is better. Sampling for pre- or post-harvest product testing has been an important and ongoing discussion within the produce industry. Three different sampling models were explored including leafy greens/STECs, tomatoes/Salmonella, and cilantro/Cyclospora [Stasiewicz final report 2023]. Regardless of commodity and pathogen, preharvest is more powerful than finished product testing for detection of pathogens. Steps (e.g., cooling, sorting, washing) that might reduce the microbial load postharvest serve to reduce the likelihood of detecting already low-level, randomly distributed, and sporadic contamination. Preharvest sampling plans need to be based upon the hazard analysis and the types of risks present in any

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.

given field. There is no practical “right number” of samples, but sampling power, or the ability to detect low level pathogens, increases with the number of samples taken and the size or the total mass of the samples. So, the more the better within the constrictions of sampling resources. Risk mapping by observation or additional rapid sampling and testing in the production environment [Verma 2023 final report] can help identify potential “hot spots” and permit concentrated sampling in those higher risk areas.

Controlling wash water quality in dump tanks – It is a question of systems control. Dump tanks often employ re-circulated wash water, handle large amounts raw product, and over time accumulate high organic loads. In a study focused on wash water control in apple dump tanks, researchers confirmed disinfectant concentration, chemical oxygen demand or COD, and contact time as critical variables that must be monitored closely to ensure pathogen control [Zhu 2023 final report]. In lab-based experiments using dump tank water the results show that as COD increases, free chlorine’s efficacy at controlling *Listeria* in wash water decreases while PAA was not impacted by COD levels. In commercial-scale experimentation using four different apple packing operations and employing apples inoculated with nonpathogenic *Enterococcus faecium* (EF) as a surrogate for *Listeria*, the research team found that each of the four dump tank systems behaved differently and that while elevated levels of free chlorine and PAA at moderate COD levels reduced EF on the uninoculated fruit and wash water, they did not prevent cross contamination from inoculated fruit to uninoculated fruit. This result is a stark reminder to all fruit and vegetable packing and processing operators that “one size, fits all” approaches to controlling wash water quality are not sufficient and that each system and product combination must be tested, operating parameters established (sanitizer concentration, contact time, pH, COD (or even just turbidity), rate of make-up water addition, product load per unit time, etc.), and microbial control validated and continuously verified during commercial operations.

***Listeria monocytogenes* (Lm) and Salmonella survival.** Timing is everything. *Listeria monocytogenes* and *Salmonella* can survive on surfaces found in dry stone fruit packinghouse environments and persist after the season [Dawson final 2023 report]. It has been shown that *Listeria* survives in wet conditions and this research demonstrates that *Listeria* also persists in dry conditions, even better than *Salmonella*. In packinghouses closed after a season, the aerobic plate count was shown to increase over time in the dry, idle facilities. Therefore, at the end of a packing season, it is best to rigorously clean the equipment and the production environment with detergents and agitation to eliminate organic residues and sanitize surfaces properly to ensure Lm and other bacteria are killed immediately and biofilm formation is prevented. Importantly, repeat the process immediately before start up the next season.

