

The Blueberry Bulletin

A Weekly Update to Growers

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Visit the Blueberry Bulletin webpage at
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2018 Commercial Blueberry Pest Control Recommendations for New Jersey
njaes.rutgers.edu/pubs/publication.php?pid=E265

BLUEBERRY CULTURE

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County Agricultural Agent

July 4th is a celebration of the freedom we enjoy in this country however it is also the date that I would recommend blueberry growers to stop applying nitrogen fertilizer. During grower visits this week I once again heard about the practice of a post-harvest application of 10-10-10. The justification for this is that blueberry plants can look pretty beat up at this time. That may be true but a post July 4th application of nitrogen has been found to increase the incidence of

stem blight, increased aphid numbers which are vectors to virus, and delayed the onset of dormancy. None of these things are beneficial to the blueberry plant and should be avoided. On the other hand, if a grower has fields which have a pH below 4.5, and lime was not applied this spring, it is a good time to apply lime. Raising the pH to the optimum range will make nutrients more available to the blueberry plant and ultimately increase plant health.

BLUEBERRY INSECT

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit
Ms. Carrie Denson, IPM Program Associate – Fruit

Spotted Wing Drosophila (SWD): Trap counts have increased from last week. In Atlantic County our average trap count was 8.2 with a high of 37. In Burlington County our average trap count was 26.5 per trap with a high of 86. These are males only, and

illustrate the high populations that have to be dealt with at this time of year. Fruit sampling shows “0” infestation so far.

Putnam Scale: Crawlers from the 1st generation are still present. Any growers

with Putnam Scale populations in harvested 'Duke' fields may want to make use of this closing window and treat the first generation with Esteem or Diazinon. Our average count this past week was 0.043 infested fruit per bush, with a high of 2.1. Scale traps average 1 crawler per trap with a high of 3 in Atlantic County, and an average of 0.5 with a high of 1 in Burlington County. These are crawlers caught on double sided tape, wrapped around black electrical tape on an infested branch.

Oriental Beetle (OB): Emergence has been very high over the last 2 weeks. High pressure areas saw a decrease to 8100 beetles per trap in Atlantic County and 10,125 per trap in Burlington County. Although numbers will continue to decrease over the next several weeks, this illustrates the extremely high pest pressure we have had for 2 years in a row. If left untreated (either by insecticide or mating disruption), these numbers will lead to dead plants.

Aphids: Aphid numbers have decreased over the past week, with an average of 5.4% of shoots infested, and a high of 36% infested. Colony size averages 1 to 5 aphids per shoot. This means for all practical purposes aphids are no longer an issue as wood hardens off and leaves mature.

Blueberry Maggot (BBM): Overall BBM populations are extremely low, probably due to the repeated insecticides used for SWD control. The Atlantic County average trap count was 0.01 per trap with a high of 1, and '0' per trap in Burlington County.

Sharpnosed Leafhopper (SNLH): SNLH captures have increased in Atlantic County but decreased in Burlington County. In Atlantic County our maximum trap count was 10, but only 1 per trap in Burlington County. Remember that unlike BBM, which is well controlled by most of the SWD sprays, SNLH is not well controlled by most of the SWD sprays. This is a sucking insect for which the neonicotinoids (Assail, Actara and Admire) work the best, along with Diazinon and Imidan.

Leps and Leafrollers: The levels being seen in commercial fields are very low and not an issue. Some increase in activity is being seen in non-sprayed and organic fields.

Anthracnose: We are still observing Anthracnose in Dukes as well as in Bluecrop. Our overall average of infested fruit per sample was 0.42% with a high of 5.5%. This is likely higher than in most years, and tells the story from a wet spring.

Table 1: Summary of insect counts seen during the week of July 1st – July 7th

	Leafroller % Inj. Shoots	Aphids % Inf. Shoots	CBFW % Inf. Fruit	Leafrollers % Fruit injury	PC % Fruit Injury	Scale % Fruit Injury
Average	0.491	5.45	0.002	0.005	0	0.043
High	42	36	0.3	0.2	0	2.1

Blueberry Trap Captures – Atlantic County

Week Ending	PC	CBFW	OB	SWD	BBM	SNLH	Putnam Scale
5/26	0.43	0.0					
6/2	0.43	0.0					

6/9	0.09	0.43	5.4				
6/16	0	0.015	31.75	0.02	0	0.072	
6/23	0.285	0.015	1436	0.176	0.024	0.104	
6/30	0.28	0	2583	2.78	0.012	0.1333	
7/7	0.428	0.016	3469	3.16	0.09	0.09	24.5
7/14	0.142	0.02	2827	8.235	0.011	0.253	1

Blueberry Trap Captures – Burlington County

Week Ending	PC	CBFW	OB	SWD	BBM	SNLH	Putnam Scale
5/26	1.67	0.18					
6/2	0.67	0.16					
6/9	0.0	0.1	0.6				
6/16	0	0.5	38.52	0.15	0	0	
6/23	0	0	1016	0.5	0	0	
6/30	0	0.25	2463	4.63	0	0.5517	
7/7	0	0.105	3741	4.8	0.25	0.143	0
7/14	0	0	1980	26.45	0	0.071	0.5

Pollinator Biodiversity

What's all the buzz about?



Green sweat bee or “peridot bee”

July 5, 2018

If you're moving pollen from one plant to another, you might be a pollinator.

Pollinators come in all shapes and sizes: butterflies, beetles, birds, bats and even humans. The only job requirement is that they transfer pollen from stamen to pistil (a flowering plant's male and female organs). As pollinators visit flowers to drink nectar or feed on pollen, they move pollen from flower to flower and help plants reproduce. Pollination is an ecological service -- a role an organism plays in its ecosystem that is essential to human life .

Bees are some of the most important crop pollinators. They increase production of about 75 percent of our crop species. When we think of bees, we tend to think of fat, fuzzy, black and yellow insects buzzing around the flowers in our garden. But fuzzy bumblebees don't have a monopoly on ensuring that flowers bloom again and blossoms turn into fruit. Across North

America alone, there are more than 4,000 wild bee species of all shapes and sizes, from the fluffy bronze *Tetraloniella davidsoni* to the iridescent emerald *Agapostemon texanus*. Researchers have found that this staggering biodiversity -- besides making our gardens and countryside beautiful -- is critical for many types of ecological services, including pollination.

NSF-funded researcher [Rachael Winfree](#) and her team at [Rutgers University](#) revealed just how important pollinator biodiversity is for crops in a recent study conducted across dozens of watermelon, cranberry and blueberry farms in the mid-Atlantic United States. Though many farmers use domesticated, non-native honey bee colonies to help with crop pollination, researchers estimate that wild pollinators provide half of the crop pollination services worldwide.

Winfree's team found that although a few dominant species are critical at smaller scales, when an entire region is considered, a high level of biodiversity is needed to ensure farmers' crops receive adequate pollination services. They found that, while on any one farm five or six wild bee species were able to provide half of the pollination, most of the 100 bee species observed in the study were needed to meet that same threshold across the nearly 50 farms in the region.

But biodiversity isn't just for "country" bees on farms. James Hung, who received NSF funding as a doctoral student and who worked in [David Holway's](#) lab at the [University of California San Diego](#), investigated the effects of urbanization on changes in wild bee diversity over time. Man-made disturbances to habitats are creating problems for pollinator communities, including significant biodiversity loss.

[Hung's research](#) revealed that habitat fragmentation due to human activity reduces bee diversity and creates a shift in natural seasonal changes that influences the number and type of bees present, affecting pollination services. Though the total number of bees was similar, that number peaked later in the year in fragmented habitats compared to undisturbed ones. Hung also found that bees living in urban scrub fragments possess relatively less variation in behaviors and physical characteristics (for example, food preferences), meaning they might not be able to render the range and quality of pollination services that bee communities in undisturbed habitats can provide. The loss of diversity and changes to seasonal turnover of bee species may threaten plant pollination in the community and potentially even crops that rely on wild bee species for pollination.

What can we do to protect biodiversity and help both our pollinator friends and ourselves at the same time?

Farmers can help by planting fallow fields and road edges with flowering plants to support wild pollinators throughout the growing season, and by reducing pesticide use, especially during crop bloom when more bees are in their fields. The average person can help, too. By filling their gardens with diverse, native plant species and limiting pesticides, anyone can create more pollinator-friendly spaces and help keep their local pollinator community diverse, healthy and beautiful.

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Related Institutions/Organizations

Rutgers University New Brunswick
University of California-San Diego

Related Programs

[Population and Community Ecology Cluster \(PCE\)](#)

Related Awards

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