

The Blueberry Bulletin

A Weekly Update to Growers

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2018 Commercial Blueberry Pest Control Recommendations for New Jersey
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BLUEBERRY CULTURE

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County Agricultural Agent

Blueberry harvest has begun however the excessive rain in May has taken its toll on numerous crops throughout the Mid-Atlantic region. Corn stand is meager at best in many areas. I saw one field where the grower had a very bad stand of germinated seedlings and decided to Paraquat the entire field. I visited strawberry fields where rotten berries were more numerous than the marketable berries. And I have seen many blueberry fields in our area where fruit set is the worst I have seen in recent memory. This is even true in fields where more than adequate numbers of hives were placed in the field. I have conducted numerous nutrient analyses on these fields and they all have come back normal. But some of these fields are off 40%-60%. The eight straight days of rain came at the wrong

time and the bees just didn't have the opportunity to work the fields as efficiently as they usually do. As we all know, honey bees do not like wind, cold, heat, or rain. These climatic factors keep them in the hives. The poor pollination is spotty, worse in some areas than others. In addition, many growers have stated that many of the set berries are small. If you open these berries up you will see that there are very few seeds in these berries. This is also a product of poor pollination. Unfortunately there was not much a grower could do. The weather is the weather. The good news seems to be that the fruit drop we experienced in the 'Draper' variety last year hasn't occurred this year. It may be that all the rain made the calcium more available to the plants. Just a guess.

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

Plum Curculio (PC): During this past week of scouting, the number of fruit found with PC scars decreased. This is due to the fact that as the larvae that are inside the fruit mature, the berries start to drop off. Our average count was 0.029 injured fruit per bush, with a high of 0.8 infested fruit per bush. Trap counts during this week have decreased as well, with a high of 1 adult per trap in Atlantic County and 0 per trap in Burlington County. This indicates that PC adults are still active but at very low levels. Some fruit was seen this week on Thursday near a woods border that had recent scars and very small larvae. This fruit has the potential to be picked. Growers should be particularly aware of possible “PC pockets” near wooded areas. In this case, the 1st post pollination insecticide had been Lannate, which **Is Not** an effective PC material. Make sure to match the materials you use with the specific pest pressure that is present.

Aphids: Aphids are also still present in some locations. In most cases populations have decreased and average about 5.6% infested shoots on new shoots. Some counts were as high as 46% of shoots infested. It is very important to get aphid control **Out of the Way and Done** so you can move on to the next pest, which will be **Spotted Wing Drosophila**. Products that work well for aphids include Assail, Admire, Actara, Sivanto, and (Movento - use with an adjuvant) the last choice is put in parentheses since most blueberry growers avoid the use of spreaders/stickers because of possible phyto problems. Make sure to check the PHI on all products and match to

your picking dates. The above products are all effective, but we did notice a recent application that was tank mixed with various foliar nutrients, including calcium and copper. In this case there was an aphid control failure. Keep it simple and avoid tank mixes, especially with products that may not be needed or may interfere with the original critical reason for the spray in the first place. Also if you intend to make aphids your main target, then use the most effective products. Control failures have also been seen with Lannate (a carbamate), Diazinon (an OP), and Mustang Maxx (a pyrethroid). None of these materials are good aphicides, but do have a place in later sprays.

LEPS/worms and Cranberry Fruitworm

(CBFW): During this past week of scouting, numbers have decreased on lower shoots as well as injury to infested fruit. The average percentage of lower infested shoots was 0.269 larvae per shoot

with a high of 10 percent of LEPS on shoots. The average count was

0.031 larvae per bush. Treatments are considered when there is at least 1 larva per bush. Some remaining CBFW and cherry fruitworm (CFW) injury (see picture) is present, but dropping off the plants. No



Cherry Fruitworm infested fruit
Photo – Carrie Denson

additional treatments are needed for these insects.

Oriental Beetle (OB): Traps were set last week in both Atlantic and Burlington County. Adults are being captured with a high in Atlantic County of 30 males per trap during the first week of emergence. Trap count records provide the grower with an idea on the effectiveness of the prior year's grub control practices and if additional controls are needed. We have seen problem fields with grubs feeding on roots when the trap counts peak out at over 600 beetles per trap. Growers should keep this approximate number in mind as we go through the OB emergence through June and early July.

Life cycle. OB completes a single generation per year. Adults (see picture) start to emerge in early June, and flight peaks in early July. 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 (see picture) 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.

Monitoring. Japanese beetle sex pheromone traps (Trécé, Adair, OK), baited with septa lures containing the sex pheromone are used to monitor OB populations and initiation of male flight.

Control. Admire Pro (imidacloprid) (4.6 lb ai/gal) is recommended to manage OB grubs infesting blueberries in New Jersey. Other formulations are also available in generic brands. Most of these are 2 lb ai/gal. These include 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. Imidacloprid has a long residual activity (>100 days) as long as the insecticide is not exposed directly to the sun.



Oriental beetle adult



Oriental beetle 3rd instar larva

Applications for early varieties like Weymouth can be made immediately after the last picking. If Duke picks by the 3rd week of June, then application should be conducted during the 2nd week of June or after harvest, between mid to the end of July. Applications for Bluecrop are recommended 7 days before the first picking, in late June or early July. Similarly, applications for late season varieties like Elliott should be conducted no later than end of July. Imidacloprid is most effective when applied as eggs hatch and grubs are still near the soil surface. Please read and follow all the conditions and restrictions on the container 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. No more than one application of Admire Pro can be used per season. However, Admire Pro (and other generics) may be used in the same field as long as the total a.i. applied does not exceed 0.5 lb/A.

Oriental Beetle Mating Disruption

As an alternative to insecticides, we recommend the use of mating disruption for oriental beetle control. Dispensers (see picture), containing the oriental beetle 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

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.

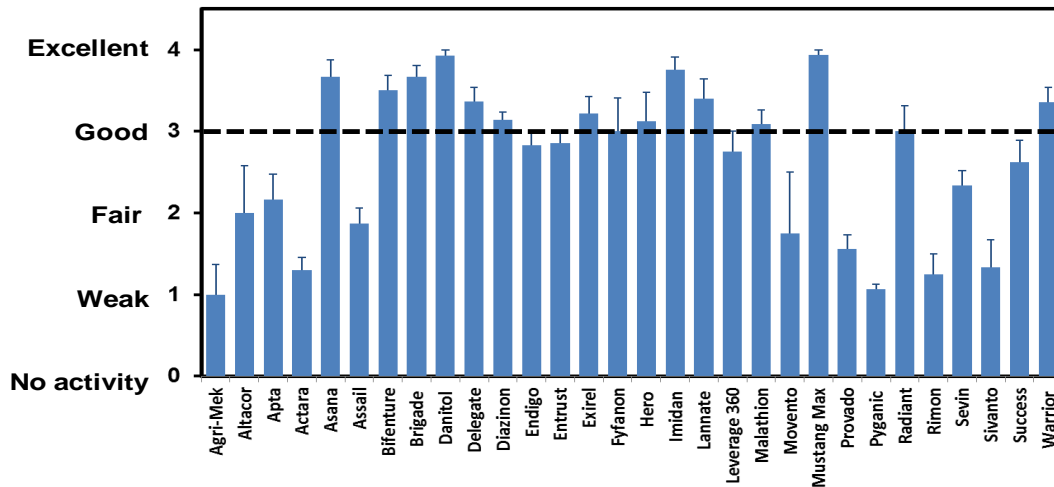


Retrievable AgBio dispensers

Spotted Wing Drosophila (SWD): We started to place traps this past week and continue into this week. **The first males were captured on Wednesday 13 June in Atlantic County.** This means that SWD is now the primary pest to target on all fruit that has any blue color. So for the immediate future, include Duke and skip most Bluecrop, Draper, and Elliot. But this will change fast as fruit starts to color and SWD populations start to increase.

Malathion Section 24C SLN (Special Local Needs) Label: Malathion is one of two materials that can be used for SWD control up to 1 day PHI. The material needs to be used at 2–2.5 lb ai per acre to be effective, and this is only possible with a section 24C label in effect. Not all formulations have the label. The Gowan label for Malathion 8 Flowable has just been renewed for up to 2.5 pt/A and is good through 2020.

Ranking of insecticides based on efficacy against SWD (data provided by Dr. Rufus Isaacs, Michigan State University)



Information provided by Michigan State University, North Carolina State University, Washington State University, University of Maine, University of California Berkeley, Rutgers University, Oregon State University, University of Georgia, Cornell University, and University of Florida.

Summary of insect counts seen during the week of June 3 – 9

| | Leafroller % Inj Shoots | CBFW % Inj Fruit | Plum Curculio % Inj Frt | Leafroller % shoots inf. | Aphids % on shoots |
|---------|-------------------------|------------------|-------------------------|--------------------------|--------------------|
| Average | 0.269 | 0.009 | 0.029 | 0.269 | 5.64 |
| High | 10 | 0.8 | 0.8 | 10 | 42 |

Blueberry Trap Captures – Atlantic County

| Week Ending | PC | CBFW | SNLH | OB | BBM | SWD |
|-------------|------|------|------|-----|-----|-----|
| 5/26 | 0.43 | 0.0 | | | | |
| 6/2 | 0.43 | 0.0 | | | | |
| 6/9 | 0.09 | 0.43 | | 5.4 | | |

Blueberry Trap Captures – Burlington County

| Week Ending | PC | CBFW | SNLH | OB | BBM | SWD |
|-------------|------|------|------|-----|-----|-----|
| 5/26 | 1.67 | 0.18 | | | | |
| 6/2 | 0.67 | 0.16 | | | | |
| 6/9 | 0.0 | 0.1 | | 0.6 | | |

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