

RUTGERS

New Jersey Agricultural
Experiment Station

The BLUEBERRY BULLETIN

A Weekly Update to Growers

Dr. Gary C. Pavlis, County Agricultural Agent

6260 Old Harding Highway, NJ 08330

Phone: 609/625-0056 Fax: 609/625-3646 Email: pavlis@njaes.rutgers.edu

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CULTURE

Dr. Gary C. Pavlis, Ph.D.

Atlantic County Agricultural Agent

A few things have come up this week that requires some discussion. The first was a question from a grower who asked if he could take a leaf sample now to determine what fertilizer he should be applying. He had not taken leaf samples at the recommended time last year which is in late July and early August. It should be understood that the levels of all the macro and micro nutrients fluctuate during the season. In addition, the deficiency, optimum, and toxic ranges for all the nutrients were determined for a very specific time of the year which again is in late July/early August so doing a leaf sample now would not be accurate and is a waste of time. The only benefit for taking a leaf sample now would be if a section of the field is showing deficiency symptoms. In that case, if samples are taken from those plants and plants with no symptoms the analysis results can be compared and the correct nutrient deficiency can be determined.

The second discussion is a word of caution. Here is New Jersey the fields that I have visited look very good. There was very little winter damage, there is very little phomopsis infection, pollination was very good and the crop load looks to be excellent. In addition the market this year looks to be an improvement over the last few years. We don't want to shoot ourselves in the foot by making any mistakes and I have seen a couple of instances where growers have mixed chemicals in their tanks and it resulted in plant phytotoxicity. I don't have to remind anyone what happened years ago. I believe we have the potential to make some money this year so if you are planning to mix chemicals that you have never mixed before, first try a jar test, and then also try the spray on a few plants. Phytotoxicity will show itself in 24-48 hours. Better safe than sorry.

Sincerely,



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

Editor - Blueberry Bulletin

GP/slp

INSECTS

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University

Mr. Dean Polk, IPM Agent – Fruit

Ms. Carrie Denson, IPM Program Associate – Fruit

Key pests and developing pests at this time include **plum curculio, cranberry fruitworm and aphids.**

Plum Curculio (PC): The average number of adults being found in beating trays or our “per bush” sample was 0.017 PC per bush over the last week. While this is lower than the preceding weeks, it also is dependent on temperature and other environmental conditions that were present when the actual monitoring took place. The average number of injured fruit is also declining at .174%. However, PC is still a target to be controlled. The maximum level seen per bush was 0.3 adults, and PC adults are present in the PC traps placed the week of 5/13, with 2.4 adults/trap in Atlantic County and 7 adults/trap in Burlington County. Therefore, any insecticides being applied over the next several days should include a PC effective material.

Cranberry Fruitworm (CBFW): Adult trap capture increased in Atlantic County and decreased some in Burlington County. Overall trap levels are low, and indicate overall low population pressure, although some increases in the Hammonton area were seen during the past couple of days. We are having an early season, and are likely entering the peak time of flight and egg laying activity. Given the early season and fruit stage, this is a pest that should be targeted along with PC (if still present). If controlling both PC and CBFW, remember that the best PC materials will also control CBFW, but the opposite is not true. Imidan and Avaunt also control CBFW, but targeted materials for CBFW like Assail, Delegate,

Esteem and Rimon do not touch PC. The pyrethroids (Bifenture, Brigade, Danitol, Hero, Mustang) will control low populations of PC, but are not ‘high PC pressure materials’. Exirel will control both pests



Adult cranberry fruitworm

Life Cycle: CBFW has one generation a year. It overwinters as a fully-grown larva within a cocoon made of silk and soil particles (hibernaculum). Pupation occurs during the early spring and moths begin to emerge during the second-third weeks of May (adults started to emerge already; see above). Male moths emerge 3-4 days earlier than females. Adults are brownish gray with a pair of white markings on each forewing (see photo above). The eggs are pale-green, flat, and are laid singly, mostly along the inside rim of the calyx cup. Eggs hatch in 5-7 days and the newly emerged larva is pale yellowish-green. Upon hatching, larvae bore into the fruit usually near the junction of stem and berry. The larva remains inside a fruit until its content is consumed, and then it moves to another fruit. A larva may feed on as many as 5-8 berries. Infested berries are contaminated with larval excrement which can be seen near the entrance hole. CBFW infestations can be recognized by the presence of webbings filled with excrement in berries (see photo on next page). Infested fruit prematurely drop. Larvae drop to the ground under blueberry plants

beginning the third week of June and build a cocoon.

Monitoring: Time of treatment can be established based on data from pheromone traps. Based on a degree-day model from Michigan State University 85 degree-days are required from first male capture –biofix– to egg laying. The number of males caught in the traps provides information on the presence and distribution of CBFW within a field. Traps are usually placed at the wooded borders of fields, where pressure tends to be high. Growers with a history of high CBFW population should especially be aware of the importance of monitoring. In addition, eggs may be scouted for after early fruit set. Larval infestation is difficult to detect early in the season, but as larvae grow, the increasing numbers of fruits affected and frass produced provide clear indication of infestation.

Control: CBFW can be controlled by registered insecticides. Either one or two applications may be needed, depending on the population level. If trap counts are high, then an early application of an insect growth regulator (Intrepid, Confirm, or Esteem) may be used when the first eggs are laid and start to hatch. In New Jersey this may be just prior to the peak flight. This would be followed by a second application soon after bloom. Post-bloom applications with broad spectrum materials (such as Danitol, Asana, or Imidan), or with softer materials such as Assail, Avaunt, Altacor, or Delegate can be done 7-10 days following the first application and after bees are removed. If trap counts indicate a lower population, then a single insecticide application may be made post-bloom. Broad spectrum insecticides are harmful to beneficial insects, and can only be applied after the removal of honeybee hives.

Aphids: Aphid populations are close to what they were the previous week – averaging about 4% infested shoots, with a maximum of 22%. Overall aphids are not a target, except under a few extreme cases.



Cranberry fruitworm damage to developing fruit

The neonicotinoid insecticide is the workhorse for aphid control. These include Actara, Assail, and Admire (imidacloprid) (IRAC 4A). Non neonicotinoid materials that also control aphids include Sivanto (IRAC 4D) and Exirel (IRAC 28).

A note for planning the next treatment: If the upcoming treatment is going to be one of your last treatments by ground, remember that aphid control is best done from the ground. If no PC activity is present, then the main insect targets become cranberry fruitworm and aphids, especially if this is one of the last ground applications. In this case, Assail becomes a product of choice, since it is effective for both aphids and CBFW.