

The Blueberry Bulletin

A Weekly Update to Growers

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BLUEBERRY CULTURE

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During visits to farms this week I was struck by the fact that a few fields that had been looking very weak a couple of years ago due to grub damage had come back very well due to the application of proper control. It brought home the need to observe problems in the field, get them diagnosed, and apply the recommended treatment as early as possible. Without early diagnosis the field slowly goes down, yield decreases, and money is lost. In the end a once productive field has to be replanted at considerable expense. I always feel good when a field that was on the brink of decline is brought back to be productive. It must be also mentioned that I saw a few fields with plants that have set fruit but no leaves. Sometimes it is just a few canes on the plant, sometimes it is

the entire plant. Either way, it spells trouble. I have written many columns in this newsletter about plants with no leaves. This is usually due to a root problem, most of the time due to grubs and sometimes due to root rot. Both can be reversed but it takes an observant eye in the field to notice the problem before it gets too advanced. This is the time of the year when we are most likely to see this problem and growers are advised to stay observant. If a plant has a full crop but does not have any leaves, the first thing that should be done is to strip the fruit off the plant. In this way, once the problem is solved the plant is able to recover. With a full crop load, it will probably die.

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

Leps and Other ‘Worm’ Larvae: Levels of Leps are still minimal. We observed a few spanworm and green fruitworm larvae, but no treatments are needed.

Gypsy Moth: Very minimal activity in fields this week.

Plum Curculio (PC) and Fruit Sampling: PC activity is still low, but will increase with the warmer weather. Since many fruit are set, we are starting to assess fruit quality. The photo below shows a fresh egg scar resulting from the female PC laying her egg on the fruit (Picture 1). A larva will develop in that fruit, and if the grower is lucky, the larva will mature and the fruit will drop before harvest. The problem is that this egg laying has been going on since about 4/15, or 1 full month. The long bloom has given PC females plenty of time to lay eggs. With warmer weather coming and bloom still remaining, the females

will continue to lay eggs until the bees are out and the first insecticides can be applied. Make sure to use a highly effective material for PC in your first post pollination spray.

Botrytis, Phomopsis and Mummy Berry Strikes: Disease has still been very minimal in the fields. Where disease is present, there is a maximum of 0.5% of bushes showing symptoms.

Cranberry Fruitworm (CBFW): Traps have been set for over a month, and we had our first catch last Friday in Atlantic County.

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, and peak activity should occur in about a week. Male moths emerge 3-4 days earlier than females. Adults are brownish gray with a pair of white markings on each forewing (see



Picture 1. PC oviposition scar on fruit. Photo Taken By: Carrie Denson



Picture 2. CBFW adult. Photo Taken By: Zsofia Szendrei

Picture 2). 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 larvae are 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 (Picture 3). 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.



Picture 3. CBFW damage to developing fruit. Photo Taken By: Zsofia Szendrei

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 (e.g. next week). 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, Exirel, 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 should only be applied after the removal of honeybee hives.

Insect Incidence							
Week Ending	CBW % Bud Feeding		CBW/Bush (Beating Tray)		Leps./Bush (Beating Tray)	PC/Bush (Beating Tray)	Gypsy Moth/Bush (Beating Tray)
	Avg	Max	Avg	Max	Avg	Avg	Avg
3/27	12.8	40	0.68	8.3	.01		
4/3	0	0	0.8	7.6	0.0		
4/11	0	0	2.06	19.6	0.003		
4/18	-	-	-	-	0.01		
4/21	-	-	-	-	0.005	0.004	
4/28	-	-	-	-	0.007	0.002	
5/4	-	-	-	-	0.013	0.022	0.001
5/11	-	-	-	-	0.03	0.004	0.022

% Injury Fruit				
Week Ending	% LEPS Injured Fruit		% PC Injury Fruit	
	Avg	Max	Avg	Max
5/11	0.05	0.1	0.2	0.3

Blueberry Insect Trap Counts				
Week Ending	CBFW-Atlantic County		CBFW-Burlington County	
	Avg	Max	Avg	Max
5/11	0.1	1	0	0

Key: CBW=Cranberry Weevil, PC-Plum Curculio, CBFW=Cranberry Fruitworm

Canadian Blueberry Fruit Certification – Applications for the 2020 Canadian Blueberry Fruit Certification (BCP) and Blueberry Plant Certification programs were prepared and mailed to previous participants by Plant Industry Division staff. New Jersey blueberry growers who wish to be certified by either of these programs enroll after April 1 annually.