

Fruit IPM 7/28/15

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Oriental Fruit Moth (OFM): While overall pest pressure in peaches is very low for oriental fruit moth, we are at the proper time to treat if your farm has trap captures above 6 males per trap. Timing for third brood OFM applications are as follows:

Third Brood OFM Timing Dates				
County/Region	Degree Days by 7/28 base 45	Insecticide Type		
		Conventional Complete	Intrepid / IGRs Complete	Diamides Complete
Gloucester - Southern	2500	2 nd - 7/27-28	1 st - Past 2 nd - 7/25-27	1 st - Past 2 nd - 7/25-27
Hunterdon - Northern	2227	1 st - 7/24-28 2 nd - 8/4-6	1 st - 7/22-24 2 nd - 8/3-5	1 st - 7/22-23 2 nd - 8/2-4

Tufted Apple Budmoth (TABM): We are between 1st and 2nd generations, and there is no activity at this time. If you had very high trap captures during the first flight, then you may wish to target insecticides for the second flight. Timings for second generation TABM control are outlined below.

	Conventional, Diamides	Conventional, Diamides	Intrepid, Rimon	Bt
County Area	AM - 4 middles	EM - 2 completes	EM - 2 completes	EM - 2 completes
Southern	1 st - 7/29-30 2 nd - 8/4 - 5	1 st - 7/31- 8/1	1 st - 8/2 - 4	1 st - 8/2 - 4
Northern	1 st - 8/7 - 9	About 8/10 - 12	About 8/12 - 14	About 8/12 - 14

Apple

Rots: Various fruit rots are being seen in apple orchards. These include bitter rot, white rot and black rot. The hot humid weather and frequent rains have been very favorable for disease development. Growers should maintain Captan as part of a disease control program, and accompanied by Pristine or Sovran if the disease pressure is high and the market justifies the expense.

Tufted Apple Budmoth: We are between generations, but treatments will be due by late next week if you are the rare orchard that has a high population of this insect. See Peach Section above. If you are using a diamide for codling moth control you should be able to skip the early treatments for TABM.

Codling Moth (CM): Under the old model all 2nd generation treatments should have just been applied. The problem with the 2nd generation is that it has become 'stretched out' in recent years. Some farms have trap counts in excess of 5-6 moths per trap, even after treating at the proper timing. The higher insect pressure may be due from emergence gradually occurring later in the season, and/or a build-up of tolerance to insecticides. Regardless of the reasons, if you have trap counts above 5 moths per trap, then you need to treat with alternative products, or different from

what you have been using. This means if you have been using pyrethroids, then switch to a diamide or Delegate, or repeated applications of Madex. On most farms, trap counts indicate low populations. Third generation treatments will be due during the second week of August in southern counties and about a week later in northern counties.

Codling Moth Degree Day Timing						
	Application and Insecticide Type					
County Area	Rimon, Intrepid, Diamides, Delegate: 1150-1200DD 1450-1500DD			Standard Insecticides, 1250DD 1550-1600DD		
DD	1150	1200	1500	1250	1550	1600
Southern	Past	Past	Past	Past	Past	Past
Northern	Past	Past	7/25-26	Past	7/27	7/29

European Red Mites (ERM): Mites have been troublesome in some orchards. Different miticides have different properties. Nealta can provide quick knock-down and works on all life stages. Zeal or Envidor take a longer time to work than some other products, so those applications should be evaluated 7-10 days after application, or they should be used for early season and young populations. Mite populations that occur at this time of year usually respond best to fast acting materials that act on adults and immature stages of mites. These materials also include Nexter, Portal/Fujimite, Kanemite, and Acramite. Slower acting miticides are usually reserved for early in the season and used on young, emerging red mite populations. These include Apollo, Savey, Agrimek, Zeal and Envidor that work best on immature mite stages.

When using a miticide during the heat of the season on building populations, coverage is the name of the game. For troublesome mite populations, coverage includes coverage of the foliage as well as coverage of the mite. Miticides do not have to be applied dilute to the drip point, but the application does have to be thorough enough to cover the tops and bottoms of leaf surfaces in the inner and outer parts of the entire tree. This means that 13-14 ft trees on M7 may need 100 – 120 gal per acre. Larger trees or poorly pruned trees may take more spray volume. Know your dilute tree row volume. Do you have 100 GPA (**Dilute**) Tall Spindle trees, 300 GPA M111's for processing, or 200 GPA M7's? For adequate mite control you need to spray at no less than 2x concentration. This means for 200 GPA M7's (spaced 10x18 at 24 feet tall) 2x=100GPA as a minimum. See pages 25-28 of the NJ Commercial Tree Fruit Production Guide for more details, or the [online Tree Row Volume calculator](https://extension.umass.edu/fruitadvisor/fact-sheets/block-specific-sprayer-calibration-worksheet) developed by Jon Clements and Ron Perry online @ <https://extension.umass.edu/fruitadvisor/fact-sheets/block-specific-sprayer-calibration-worksheet>.

The addition of a spray adjuvant or 1qt of oil/A often helps with mite control, but make sure to read the label for the specific adjuvants that are permitted. Use recently manufactured materials, and those stored under proper conditions. Problems have been seen when old products that were subjected to poor storage conditions were used in the following seasons. Under high populations and no predators, alternate middle sprays do not work, but full cover (every middle) applications do work. If predatory mites are present at even .25 predators per leaf, then it is highly likely that they will help with mite control, and you can use an alternate middle application, then re-check 7 days later to see if you need further treatments. Do not use a single

miticide chemistry more than once per season, and do not use any oils or penetrating surfactants (Regulaid, Silwet products) with or close to Captan applications. The following is a summary of available miticides.

Product	Active Material	Mode of Action	IRAC Class	Notes
Zeal	etoxazole	Mite growth regulator	10-10B	Mostly an ovicide with additional toxicity on early mite stages. Use early and on young populations.
Apollo	clofentazine	Mite growth regulator	10-10A	Active on eggs and other immature stages. No activity on adults. Use early on young populations.
Onager / Savey	hexythiazox	Mite growth regulator	10-10A	Active on eggs and other immature stages. No activity on adults. Use early on young populations.
Agrimek	abamectin	Nerve membrane activity	6	Breaks down rapidly in sunlight, but absorbed in new growth leaf tissue. Must be used early in season. The use of a spray penetrant is required. Do not mix with any sticker adjuvant.
Envidor	spirodiclofen	Lipid synthesis, mite, endocrine disrupter, mite growth regulator	23	Affects multiple stages including adults, but slow acting. Most effect on juveniles. Do not mix with oil. Not to be used as a quick knock-down material.
Acramite	bifenazate	Neuronal inhibitor but unknown mode of action	Un	Used against motile forms with some ovicidal activity. No rust mite activity.
Nexter	pyridaben	Blocks cellular respiration, METI inhibitor, complex 1	21A	Contact knockdown miticide effective on all motile stages.
Portal	fenpyroximate	Blocks cellular respiration, METI inhibitor, complex 1	21A	Contact knockdown miticide effective on all motile stages. Effective on juveniles and adults. Some effect on eggs. Wetting agents suggested. Do not use dormant oil.
Kanemite	acequinocyl	Blocks cellular respiration, METI inhibitor, complex III	20B	Similar to the 21A materials but active at a different cellular site. Effective on juveniles and adults. Some effect on eggs.
Kelthane	dicofol	Organochlorine, nerve poison, unknown mode of	Un	Older material but long lasting. Resistant populations may still exist. No ovicidal activity.

		action.		
Vendex	fenbutatin oxide	Organo tin compound. Interferes with energy metabolism and ATP synthesis.	12B	Older material but long lasting. Resistant populations may still exist. No ovicidal activity.
Carzol	formetanate hydrochloride	Carbamate, acetylcholinesterase inhibitor, affects nerve system.	1A	Older contact material, fairly short lived. Do not apply after petal fall.
Nealta	cyflumetofen	Electron transport inhibitor	25	Works on all mite stages, including eggs. Not systemic so needs thorough coverage.

Grape

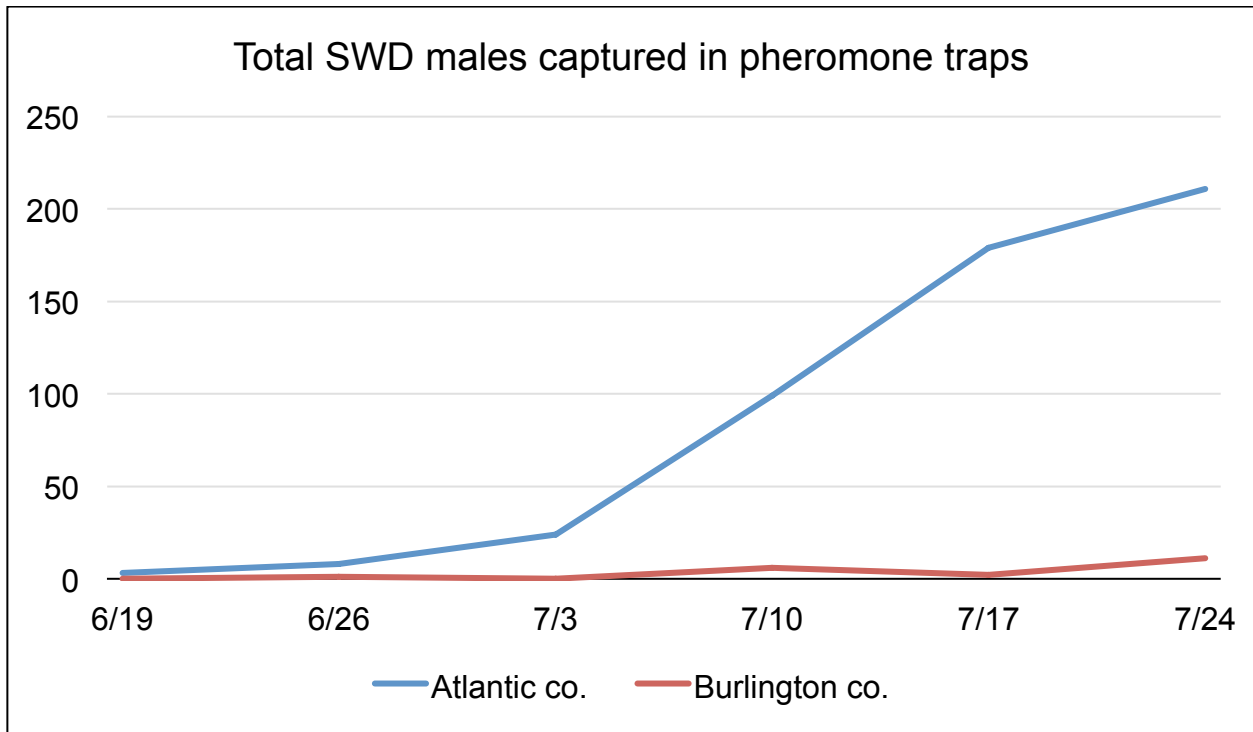
Grape Root Borer (GRB): GRB adults continue to emerge. Adults are being seen in pheromone traps and pupal cases can be seen on the ground around the bases of vines. It should be noted that some of our monitored vineyards show very low to no pupal cases on the ground. Therefore population in these vineyards are very light. However other vineyards show heavier populations and will likely benefit from treatment.

Grape Trap Captures 2014		
Date	GBM	GRB
5/30	1	
6/6	2	
6/13	4	
6/20	4	
7/4	7	
7/11	3	
7/18	1	
7/25	2	10

Blueberry

Spotted Wing Drosophila (SWD): The average number of male SWD in Atlantic and Burlington counties increased over the past week. The average trap count for male flies in Atlantic county was 4.4 and 0.9 in Burlington county. In addition, the total number of sites where SWD was found increased for both counties, Atlantic county had 36 positive sites and Burlington county had 3 sites.

Over the past week, we had the first positive salt tests in Burlington county. The positive tests were from already harvested Bluecrop fields. There were no positive salt tests in Atlantic county. Growers that are still harvesting should continue to follow the 7-day insecticide program for SWD, especially those with Elliott or other late varieties.



Blueberry Maggot (BBM): Blueberry maggot remained low in both counties over the past week. Treatment options effective against BBM and SWD include: Asana, Adjourn, Brigade, Danitol, Exirel, Hero, Imidan, Lannate, and Malathion.

Sharpnosed Leafhopper (SNLH): Trap counts remained low in both Atlantic and Burlington Counties since we are between generations (see trap count table below). We are continuing to monitor for SNLH second generation.

Putnam Scale: While some scale is present on a few sites, 2nd generation crawlers have not yet emerged. If you had scale in some of your fields during the first generation, then you should plan on treating those fields when the second generation crawlers become active.

Anthracnose: We continue to see anthracnose in the field. Last week, 39% of evaluated sites had berries with anthracnose.

Blueberry Trap Counts

Atlantic County					
Week ending	CBFW	OB	BBM	SNLH	SWD
6/6	0.01	9.7	0		
6/13	0.4	94.5	0	0	0
6/20	.04	1634	0.04	0.14	0.08
6/27	0.05	2065	0.11	0.12	0.16
7/4	-	2013	0.34	0.10	0.49
7/18		1527	0.09	0.04	3.51
7/25		597	0.02	0.04	4.40

Burlington County					
Week ending	CBFW	OB	BBM	SNLH	SWD
6/6	0				
6/13	0.7	8.7	0	0.05	
6/20	0.26	1799	0.0	0.15	
6/27	0.25	1700	0	0.10	0.11
7/4	0.19	864	0	0.05	0
7/18	-	320	0	0	0.3
7/25	-	215	0	0	0.9

Tree Fruit Trap Counts – Southern Counties

Week ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
4/18	0				0		0			
4/25	23				5		0			
5/2	8				9		0			
5/9	23	0	2		86		14	0	7	
5/16	1	2	4		50		8	4	15	
5/23	4	13	8		1		6	32	24	
5/30	2	14	5		2	11	2	20	124	
6/6	2	31	2		2	28	2	53	32	
6/13	16	16	5		2	15	3	29	5	
6/20	23	11	1		13	35	1	23	43	0
6/27	32	3	1		14		1	6	24	1
7/4	25	2	3		17	35	3	2	13	3
7/11	70	0	10		14		2	2	13	4
7/18	11	0	4		27	8	1	1	14	0
7/25	52	1	6		26	11	3	2	10	6

Tree Fruit Trap Counts – Northern Counties

Week ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OBLR	OFM-P	TABM-P	LPTB	PTB
4/18	0				0			0			
4/25	14				0			0			
5/2	36				0			0.6			
5/9	148		0.0		2.1			17.1	0.0		
5/16	92	0.0	7.9		3.5			19.1	0.0	0.0	0.0
5/23	31	3.6	7.3		8.5	5.3	0.0	4.4	1.1	3.1	0.0
5/30	37	9.1	7.7		5.5	13.3	0.0	2.1	4.9	21.2	0.0
6/6	7	39.7	5.7		0.7	14.7	3.3	0.6	37.1	23.8	0.7
6/13	25	53.9	4.8		0.3	3.0	33.7	0.1	57.9	13.7	1.7
6/20	131	56.8	3.5		0.7	4.3	32.0	2.2	81.5	10.7	4.0
6/27	204	44.9	2.4		1.0	4.7	14.0	5.5	63.4	14.1	3.0
7/4	164	25.7	0.6	0.0	1.3	2.0	0.0	1.4	22.4	4.2	3.0
7/11	218	8.0	1.2	0.0	1.7	3.0	0.0	1.8	11.6	4.5	1.0
7/18	68	2.2	3.9	0.0	1.3	4.7	0.0	1.3	3.0	5.3	0.3
7/25	57	1.9	3.4	0.0	2.9	4.7	0.0	2.2	1.9	4.7	0.7