

## Fruit IPM

6/7/16

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### Peach:

**Brown Marmorated Stink Bug (BMSB):** Adults are occasionally seen during orchard scouting. Knock down materials will be required for the remainder of the season in orchards with BMSB populations.

**Oriental Fruit Moth (OFM):** We are between the 1<sup>st</sup> and second generation flights in all areas of the state. Second generation adults should start emerging in the near future and mate and lay eggs, which produce the second brood. This is often the brood that causes the most damage on peaches, since larvae can enter both growing tips and young fruit. Particular attention should be paid to non-bearing orchards that may not be receiving regular insecticide applications. OFM can build up in non-bearing blocks and create pressure for production blocks. Timing for second brood OFM applications:

OFM 2 <sup>nd</sup> Generation Timing				
County/Region	Degree Days by 6/7 base 45	Insecticide Type		Diamide (Altacor, Belt, Voliam products)
		Conventional	Intrepid / IGRs	
Gloucester – Southern	917	1 <sup>st</sup> – 6/17-21 2 <sup>nd</sup> – About 6/26-6/28	1 <sup>st</sup> – 6/15-6/17 2 <sup>nd</sup> – About 6/24-6/26	1 <sup>st</sup> – 6/13-15 2 <sup>nd</sup> – About 6/23-6/26
Hunterdon – Northern	787	1 <sup>st</sup> – 6/22-6/24 2 <sup>nd</sup> too far off	1 <sup>st</sup> – 6/20-6/22 2 <sup>nd</sup> too far off	1 <sup>st</sup> – 6/19-6/21 2 <sup>nd</sup> too far off

**Tufted Apple Budmoth (TABM):** The first of 2 flights of tufted apple budmoth have started, although a little late this year. Adults started to emerge in northern counties on 5/10 and in southern counties on 5/14. Although this has been a minor pest, timings are outlined below for anyone who had high populations last year.

	Conventional, Diamides	Conventional, Diamides	Intrepid, Rimon	Bt
County Area	AM	EM	EM	EM
Southern	1 <sup>st</sup> 6/4-5; 2 <sup>nd</sup> 6/9-6/10	6/6-6/8	6/4-6/11	6/8-6/10
Northern	1 <sup>st</sup> 6/3-4; 2 <sup>nd</sup> 6/9-6/10	6/5-6/7	6/4-6/10	6/7-6/10

**San Jose Scale (SJS):** Immature scale ‘crawlers’ emerge from underneath the female scale about 4-6 weeks after mating. This is usually about the first week of June. The NEWA model for SJS is estimating crawler emergence starting now from central counties and south. If you have scale infestations on your trees, it is important to note if crawlers are present, even if you treated with oil in the early spring. If crawlers are present then the best treatment options include Centaur,

Esteem, and Movento. Centaur and Esteem are insect growth regulators (IGRs), and should be applied as soon as crawlers are seen. Movento should be applied a little earlier, almost as a preventative. An adjuvant/penetrant must be used with Movento and helps with Centaur and neonicotinoids. Movento is systemic, and needs time to translocate throughout the tree to be effective. The effective neonicotinoids, include Assail, Actara and Admire, which will have direct activity against the crawlers. Diazinon is a last resort, and labeled for only one post bloom or foliar application on stone fruit (Rec = max. of 2 lb/acre of the 50W). The apple label allows up to 2 foliar applications per year as long as a prebloom application WAS NOT made. Foliar applications may cause russet, but has worked in the field for scale crawlers as long as applications are made 1-2 weeks after the start of crawler emergence and again 2 weeks later.

**Thrips:** Looking ahead to early varieties and thrips - Unless Delegate is used for TABM or OFM control, susceptible early varieties like Easternglo, PF-5, and Sentry should be scheduled to receive a thrips treatment from 1 to 2 weeks preharvest. Delegate @ 6-7 oz/ac is effective for thrips. The PHI varies for different stone fruit crops, but is set at 1 day for peaches and nectarines. The addition of a non-ionic surfactant can help improve control. Lannate SP @ 1#/A (or LV @1.5-3 pt/A) may still be effective in some orchards. Prolonged periods of dry weather favor thrips buildup more than the current weather pattern, which at the moment is not favorable for thrips populations to build. However, thrips continue to be present in many peach blocks. This deserves extra vigilance when the fruit begins to ripen.

**Brown Rot; Anthracnose:** Thundershowers and overhead irrigation done around periods of warm temperatures and high humidity can provide good opportunities for brown rot infection, particularly in blocks with damaged fruit or blossom blight. An improved fungicide schedule should be initiated 2 to 3 weeks prior to the first picking. Captan used for brown rot, is also effective for anthracnose control, and with repeated sprays in the covers. Repeated Captan use in cover sprays has shown decreased brown rot levels at harvest. For anthracnose, pay attention to susceptible varieties such as white peaches. While cover sprays are important, the most important timings seem to be early preharvest sprays starting 3-4 weeks before harvest. Pristine has also been very effective based on past experience.

**Bacterial Spot:** Leaf symptoms have been seen in only a few locations and only on highly susceptible varieties, however a few fruit lesions began to appear last week. This week's heavy rains may have initiated additional infections. Leaf symptoms that can appear a few days after infection, and fruit symptoms to appear in about 3 weeks after an infection. Fruit remains highly susceptible until pit hardening so management practices should be continued at least until the middle of June.

**Rusty Spot:** Symptoms are appearing in the field now in southern counties. Maintain control measures until about pit hardening. This is another area where having flowering weeds in your ground cover is a bad thing. DMI fungicides (Rally; difenaconazole) are the current standard rusty spot controls, but if combined with a neonicotinoid insecticide insect control, you have a toxic combination for bees. If you have a weedy ground cover and use a neonic, then consider using one of the biorationals (Armicarb; Kaligreen; Serenade) in place of Rally to minimize impact on bees.

**Apple:**

**Codling Moth (CM):** The first generation should be over, but high trap counts are still present on some farms. Where this occurs, then continued effective insecticide applications are required when trap captures exceed 5 adults/trap per week. The majority of eggs are hatching during this period, so continued coverage is important in areas with high populations.

Codling Moth Degree Day Timing								
		Application and Insecticide Type						
County Area	Biofix	Rimon: 75-100DD + 14-17 days later	Intrepid 150 + 450 DD Diamides - Altacor, Voliam mixes: (150-200 DD) + 14-21 days later		Madex 250 DD + every 7-9 days during brood hatch (later if first spray is an IGR)	Standard Insecticides - Delegate, Avaunt, OP's, carbamates, pyrethroids 250 DD + 550 DD		
DD		75	100	150	450	250	250	550
Southern	April 22	Past	Past	Past	Past	Past	Past	6/6
Northern	April 26	Past	Past	Past	Past	Past	Past	6/11

**European Apple Sawfly (EAS):** Sawfly larvae, particularly in North Jersey orchards, are moving between fruit as the larvae mature and feed on multiple fruits. Thorough coverage with effective insecticides can still limit the damage if larvae contact covered fruit while they move between fruit.

**Woolly Apple Aphids (WAA):** WAA colonies are starting to be seen in several northern locations. Movento applied now with an adjuvant is still the best option for control, but your window is closing as leaves become more mature. Diazinon can be a rescue treatment if needed. Admire will also give some control.

**Tufted Apple Budmoth (TABM):** See peach section.

**San Jose Scale (SJS):** See peach section.

**Fire Blight:** The shoot blight phase of the disease is present in a few areas in southern counties. Where blight is present pruning out infected shoots is important now especially if thunderstorms are predicted.

**Summer Diseases:** We are now entering the phase for secondary scab control if primary infections are becoming visible. The primary diseases of concern are the Rots, Sooty Blotch and Fly Speck. Anthracnose (Bitter Rot) has been troublesome over the past few wet seasons especially on Empire. If you are using the extended EBDC schedule control should be good on most cultivars. Where anthracnose control has been difficult to control consider using Pristine, or

add Captan or Ziram to the program. The following table for timing apple fungicides is from the 2016 Pennsylvania Tree Fruit Production Guide:

Table 4-7. Apples: fungicide timing.

	Disease									
	Alternaria leaf blotch	Apple scab	Bitter rot	Black rot	Blossom end rot ( <i>Botrytis</i> )	Flyspeck	Powdery mildew	Rusts	Sooty blotch	White rot
½-inch green	—	++	—	—	—	—	—	—	—	—
Prepink	—	++	—	—	—	—	++	—	—	—
Pink	—	++	—	+	—	—	++	+	—	—
Bloom period	—	++	—	++	+	—	++	++	—	—
Petal fall	—	++	—	++	+	—	++	++	—	—
First cover spray	+	++	—	++	+	—	+	+	—	—
Second cover spray	+	++	—	+	—	—	+	—	+	—
Third cover spray	+	+	+	+	—	+	—	—	+	+
Fourth cover spray	+	+	+	—	—	+	—	—	+	+
Fifth cover spray	+	+	++	—	—	++	—	—	++	++
Sixth cover spray	+	+	++	++	—	++	—	—	++	++
Seventh cover spray	+	+	++	++	—	++	—	—	++	++

++ = ideal timing of material for disease control; + = presence of disease and possible control; — = control generally is not needed at that time

### **Scouting Calendar Tree Fruit Southern Counties**

The following table is intended as an aid for orchard scouting. It should *not* be used to time pesticide applications. Median dates for pest events and crop phenology are displayed. These dates are compiled from observations made since 1995 in Gloucester County. Events in northern New Jersey should occur 7-10 days later.

Pest Event or Growth Stage	Approximate Date	2016 Observed Date
Full Bloom Peach (Redhaven)	April 9 +/- 14 Days	April 5
Codling Moth Biofix	April 27 +/- 13 Days	April 22
Full Bloom Apple (Red Delicious)	April 22 +/- 11 Days	April 20
Petal Fall (Redhaven)	April 22 +/- 10 Days	April 22
Petal Fall (Red Delicious)	April 27 +/- 14 Days	May 8
Shuck Split (Redhaven)	April 30 +/- 11 Days	May 2
First PC Oviposition Scars Observed	May 3 +/- 18 Days	May 10
Tufted Apple Bud Moth Biofix	May 4 +/- 10 Days	May 14
Bacterial spot observed on peach leaves	May 15 +/- 21 Days	May 26
Rusty spot symptoms	May 12 +/- 19 Days	May 30
OFM Flagging observed	May 12 +/- 5 Days	5/31
Second Generation Pear Psylla Hatch	May 25 +/- 8 Days	5/29
Bacterial Spot observed on stone fruit	May 25 +/- 33 Days	6/2
White Peach Scale Crawlers active	May 26 +/- 11 Days	Not yet observed
San Jose Scale Crawlers active	June 2 +/- 8 Days	Not yet observed

### Tree Fruit Trap Counts – Southern Counties

Week End	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
4/9	4				55		0			
4/16	48				25		3			
4/23	14	0			89		9			
4/30	20	0	32		81		9	1		
5/7	0	0	7		38		3	0	0	
5/14	4	1	7		23		0	0	16	
5/21	0	0	7		35		1	1	44	
5/28	0	8	9		9		0	8	42	
6/4	0	0	15		11		0	8	52	

### Tree Fruit Trap Counts – Northern Counties

Week End	STLM	TABM-A	CM	AM	OFM-A	DWB	OBLR	OFM-P	TABM-P	LPTB	PTB
4/2	0.3							0.0			
4/9	4				0.0			0.0			
4/16	20				0.0			0.0			
4/23	34				4.3			7.0			
4/30	59		0.4		10.3			10.8			
5/7	122		0.1		1.8			2.3			
5/14	14	0.2	1.3		3.0			1.2	0.1	0.0	0.0
5/21	32	1.1	3.7		5.8			1.7	0.6	4.2	0.0
5/28	16	2.0	2.8		11.0	8.8	0.0	1.2	0.3	6.9	0.0
6/4	23	3.7	3.1		1.2	5.2	0.0	1.6	11.3	20.3	0.8

#### Blueberry:

**Aphids:** Aphids are the principal insect target at this time. Scouting results have shown an average of 8.15% infested shoots over the past week, with a high of over 80% infested shoots. Our action threshold is when roughly 10% of the new growing terminals are infested. Use any of the neonicotinoid materials at this time for the most effective aphid control. These include: Actara, Assail and AdmirePro

**Cranberry Fruitworm (CBFW):** Adults are flying and laying eggs. While they should be hatching, we have not seen any early larval injury yet. This weeks treatments should target primarily aphids and secondarily, cranberry fruitworm.

**Plum Curculio (PC):** Plum curculio egg scars continue to be found. Although few and far between, adults are still active. A number of green berries were examined and contained live larvae. This is normal for this time of year. Those larvae will make the fruit prematurely ripen and drop, so they should not end up in the packing house.

**Oriental Beetle (OB):** Traps indicate that the first adults have started to emerge. AdmirePro can be applied now and throughout the flight period as long as you can keep outside the 7 day PHI. This treatment will target the newly hatched larvae up through the 2<sup>nd</sup> instar stage, or about mid July.

**Spotted Wing Drosophila (SWD):** One adult was captured in a research plot in an unsprayed field this week. While this is only 1 adult, it does show that this will be the principal pest over the next several weeks. This **Should Not** change your pest management approach this week.

**Disease:** Botrytis infected berry clusters are present on a number of farms. Infected fruit can infect other neighboring fruit if they are touching (see Figure 1). If in your judgment you have high levels, then consider using a fungicide that is effective for both Botrytis and Anthracnose (like Switch or Captevate) in the next spray. See the Commercial Blueberry Pest Control Recommendations.



Figure 1. Botrytis on fruit cluster 6/3/16