Fruit IPM 6/3/14

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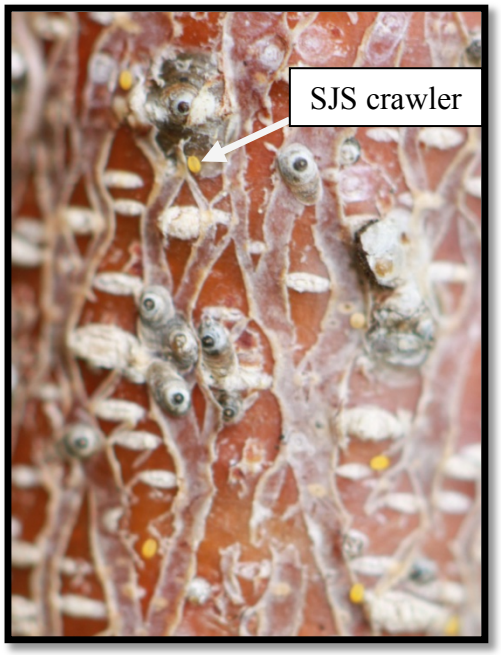
Peach

Bacterial Spot: Leaf symptoms have been seen in only a few locations and only on highly susceptible varieties. Bacterial spot has not been troublesome this spring despite some favorable weather. Fruit symptoms should appear later in the week from the severe weather of May 24.



San Jose Scale (SJS): Scale crawlers are now active in southern counties. The best materials include Esteem, Centaur, and Movento. Esteem should be applied at the start of crawler emergence (now), while Centaur can be applied as late as peak emergence (in about 2-3weeks) Movento should have already been applied. It can still be used but be aware that it will take up to a week become fully systemic. The neonicotinoid compounds have also shown good control when applied to the crawler stage. Spray volume is the name of the game when achieving good scale control. Diazinon can also be used with a maximum of 1 in-season application per year. The sprayer should be calibrated to soak all wood surfaces where there is known scale activity.

Tufted Apple Budmoth (TABM): Tufted apple budmoth started to emerge on 5/11 in southern counties and on 5/19 in Hunterdon County. While this insect has not been an issue over the last 6-8 years, locally high levels of moths have been captured in some pheromone traps this past week. TABM is a leafroller that can web a leaf to the surface of the fruit, and feed between the leaf and the fruit. On peaches this damage can lead to unmarketable and rotten fruit. Young larvae may get established in the stem end. When this is the case, the larva can 'fall' into the fruit interior in varieties where the flesh easily separates from the pit, or in split pit fruit. Degree day modeling for timing sprays dictates that the first treatments should be timed for around Wednesday 6/3 in southern counties, and by about 6/10 in Hunterdon County and northern farms. This is for conventional materials, including Altacor, Belt and other diamide mixtures. Timings for TABM control are outlined below. If you are a grower who did have TABM damage last year, you are advised to use the timings that follow:

	Conventional, Diamides	Conventional, Diamides	Intrepid, Rimon	Bt
County Area	AM – 4 Alt Mid Sprays	EM – 2 Complete Sprays	EM – 2 Complete Sprays	EM - 2 Complete Sprays
Southern	1st 6/3, 2nd 6/8-6/9; 3rd 6/13-6/14	1st 6/5-6/7	1st 6/4-6/9	1st 6/7-6/9
Northern	1st 6/10-11; 2nd 6/16-18	1st 6/13-14	1st 6/12-13	1st About 6/16-18

Much of this first generation will overlap with codling moth in apple. Many of the same materials used for TABM control will also control codling moth. See apple section below.

Brown Marmorated Stink Bug (BMSB): Adults have been captured in pheromone traps for the past couple of weeks. While some adults have been seen on block edges, no nymphs have been seen. Going forward, growers should start to include materials that are effective for BMSB control.

Apple

Approaches for Brown Marmorated Stink Bug and Other Pests: Given localized high trap counts of TABM, and Codling Moth (CM), one must consider these pests when managing BMSB. If you have high populations of internal Leps, (CM and OFM), and/or TABM pressure, then consider the diamides (Altacor, Belt, Tourismo, Voliam Flexi, or Voliam Xpress), or Delegate. If using the diamides, then a BMSB material needs to be included. Therefore either Voliam premix will work. Altacor, Belt, Tourismo and Delegate will need another insecticide added to the mix. CM, OFM, and TABM treatments should be timed by the degree day model. BMSB needs regular fresh insecticide applications, especially to border rows and row ends next to wooded areas or alternate hosts. It can be too expensive and wasteful to combine everything in frequent cover sprays, not to mention trying to stay within label limits. Therefore consider using degree timed sprays for Lep. control supplemented with 7 day border applications with BMSB materials.

Codling Moth (CM): The following chart updates application timings for southern and northern counties. Overall, trap counts are low, but a few sites still show populations above treatment levels. Most CM eggs in northern counties still are not hatched, and on some farms in northern counties trap averages range from 20 to over 80 moths per trap. This is considered high pest pressure.

Codling Moth Degree Day Timing								
	Application and Insecticide Type							
County Area	Rimon: 75-100DD + 14-17 days later Intrepid: 150 + 450 DD			Intrepid 150 + 450 DD Delegate, Diamides - Altacor, Voliam mixes: (150-200 DD) + 14-21 days later		Cyd-X, Carpovirusine 250 DD + every 7-9 days during brood hatch (later if first spray is an IGR)	Standard Insecticides, Delegate, Diamides – Belt, Tourismo 250 DD + 550 DD	
DD	50	100	150	150	450	250	250	550
Southern	Past	Past	Past	Past	6/4	Past	Past	6/9
Northern	Past	Past	Past	Past	6/11	5/31	5/31	About 6/15-17

Plum Curculio (PC): PC was still active in southern counties early this week, and fresh injury is still present in northern counties. Where PC sprays have not been applied, use materials that are effective for Leps and PC. Avaunt, Imidan, and Voliam-Flexi are options. This will likely be the last insecticide for PC control in southern counties, but 1 additional application may be needed in northern counties.

Tufted Apple Budmoth (TABM): TABM applications come slightly later than those targeted against codling moth. However in recent years the second and sometimes first CM flights have been drawn out over a longer period of time. Therefore treatments for TABM that include diamides, Delegate, and even pyrethroids will help control CM.

Apple Scab and Powdery Mildew: Scab control has been very good in southern counties this spring with only a few orchards showing symptoms. By next week growers that do not have scab can start to concentrate on the summer disease complex. Be sure to include materials effective for bitter rot.

Aphids: Spirea and Apple (green) Aphids: Populations continue to build. Our treatment threshold is set at 50% of the terminals infested with healthy colonies. Predation by lady beetles or other predators is starting to occur in some blocks. In most cases biological control is possible if 20% or more of the infested terminals have beneficial insects actively feeding. When terminals begin to stop growth and harden, aphid populations will diminish, usually about early to mid July.

Wooly Apple Aphid (WAA): No wooly aphid colonies have been observed to date but this is the time of year when they begin to appear. This secondary pest has become more of a problem in recent years, probably due to increased use of pyrethroids. Wooly aphids will feed on pruning wounds, one year old wood, and suckers. They cause injury by secreting honeydew onto developing fruit, and can injure the buds for the following year. During the current year's growth, sooty mold can grow on the honeydew making the fruit unmarketable. Beneficial insects will usually control WAA in orchards that are on "soft" insecticide programs. Since pyrethroids and Lannate kill most predators and parasitoids, treatable populations often develop in orchards relying on those materials. Movento is labeled @ 6-9 oz./ac and is effective for WAA control. Movento will also control scale and aphids at this time. Other controls include Thionex 3EC applied at 1.3-2.6 qt./ac (or 50W @ 4lb/ac). Thionex applied at this time may also suppress GAA, and BMSB. Thionex is being phased out, and can be used in apples only until July of 2015. Diazinon 50W @ 3-4#/ac may also be effective and is another choice where scale suppression is needed.

European Red Mite (ERM): Mites are present in a few apple blocks statewide. Most levels are below the treatment threshold of 2 mites/leaf for late May through early June. Some locations have up to 3 mites per leaf and many eggs. The most effective miticides at this time are Nexter, Portal or Fujimite, Kanemite, and Zeal. See the New Jersey Tree Fruit Production Guide for rates.

Pear

Pear Rust Mite: Pear rust mites should be appearing soon. Whereas apple rust mite is desirable in apple orchards to provide a food source for predatory mites, the threshold for rust mites in pears is much lower. In the mid-Atlantic area you can generally tolerate up to 10 rust mites per fruit, which is a very low number since rust mites can easily be found in excess of 200-300 per leaf or fruit when the population starts to increase. Examine the calyx end of individual fruit with

a strong hand lens. Russet damage appears starting from the calyx end and progresses up toward the stem. If this russet inhibits marketing of the non-russet varieties, rust mites should not be tolerated past the treatment threshold. However, higher populations may be tolerated on russet varieties like Bosc, especially if direct marketed. Pictures of rust mite on pear can be found here. Rust mites can be controlled with most miticides. Effective materials include Agri-Flex and Agri-Mek, Envidor, Nextar, Onager, and Savey (on early, low populations). Agri-Flex differs from Agri-Mek in that Agri-Mek has 8% abamectin, the active ingredient that controls mites, and Agri-Flex has 3% abamectin combined with 13.9% thiamethoxam (the a.i. in Actara). This means you need more Agri-Flex than Agri-Mek for mite control. The combination does not add anything for mite control, but does broaden the target spectrum to include aphids, psylla and PC. Remember that any abamectin formulation needs to be combined with oil. M-Pede applied @ 2 gals/100 will also do a good job controlling rust mite and will help to suppress any remaining psylla populations. M-Pede should not be applied in hot weather, since it can cause poor finish. Use caution if applying M-Pede to oriental pears as some varieties may defoliate.

Grapes

Grape Berry Moth (GBM): Trap captures of first generation adults have begun. Adults will soon lay eggs on newly set fruit. These adults come from wild grapes in adjacent wood edges. Some species of wild grapes bloom earlier than vinifera varieties, which helps explain why the adults are present even before the cultivated grapes come into bloom. While growers can treat for the first generation just after bloom, the more critical timing is for the second generation. The phenology model used in Michigan, Pennsylvania and New York, uses wild grape bloom as the biofix and counts 810 degree days (base 47) until the timing for the first insecticide application. Last week wild grapes were just beginning to bloom, so we set the grape berry moth biofix at 5/28 in southern counties. We are using the Skybit models to accumulate degree days and will provide updates later in the season, but as a broad estimate, second generation treatments will likely be due at the beginning of July.

Grape berry moth adult, as it appears in a trap.

Scouting Calendar

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 over the past 5-10 years in Gloucester County. Events in northern New Jersey should occur 7-10 days later.

Pest Event or Growth Stage	Approximate Date	2014 Observed Date
1/4" Green Tip Red Delicious	March 27 +/- 10 Days	April 11
Tight Cluster Red Delicious	April 8 +/- 10 Days	April 17
Pink Peach (Redhaven)	April 10 +/- 9 Days	April 13
Pink Apple (Red Delicious)	April 13 +/- 11 Days	April 24
Full Bloom Peach (Redhaven)	April 16 +/- 7 Days	April 21
Full Bloom Apple (Red Delicious)	April 20 +/- 9 Days	May 3
Petal Fall (Redhaven)	April 21 +/- 9 Days	May 2
Petal Fall (Red Delicious)	April 27 +/- 13 Days	May 11
Shuck Split (Redhaven)	April 29 +/- 7 Days	May 11
Second generation Pear Psylla Hatch	May 29 +/- 3 Days	Not yet observed
SJS Crawlers-first generation	June 6 +/- 4 Days	June 2
Pit Hardening	June 19 +/- 5 Days	Not yet observed

Blueberry

Cranberry Fruitworm (CBFW): Trap counts are spotty with most locations having "0" to low trap captures. However some locations show 20-22 adults per trap. Given the time of year, and the past history of how fast adults will emerge, we are calling this the ideal time to treat for CBFW if present. Remember that this can be an edge related pest, so large acreage growers are more likely to be concerned with field edges, while smaller acreage growers surrounded by woods will wish to treat the entire acreage.

Aphids (Several species): Aphid populations are starting to increase, and can be found on all farms. There is a huge variability in what is found from field to field. We bias our sampling, and count the percent infested shoots on new lush growth at the bottoms of the bushes. Remember that aphids are a vector for scorch disease. Therefore we use a very conservative treatment threshold. Anytime 10% of the new shoots are infested with 1 or more aphids, a treatment is recommended. Recent scouting showed numerous fields with over 10% of terminal infested. As of early this week colonies were composed of single aphids, reproducing colonies, and winged forms. This means that populations will increase rapidly and treatments are justified on most farms.

Putnam Scale: Tape traps were set on several farms in "hot spots" about 2 weeks ago. Counts taken on Monday 6/2 showed about 1,000 crawlers per trap at some locations. This is a little earlier than expected, but does indicate that the cold winter and cool spring did nothing to delay scale activity. Growers who have significant scale populations should consider treating the first generation. High volumes of Esteem or Diazinon will control scale, but Diazinon will also control SWD. Crawler activity should increase over the next couple of weeks.

Spotted Wing Drosophila (SWD): Traps have been installed at 25 locations with 3 different bait types. Monitoring of these traps will start later this week. Given the other pests that are present, the use of Assail for Leps (CBFW) and aphids is common. When applied late next week, it is likely that some fruit will start to show some color, at least in Atlantic County, making the fruit attractive for SWD. Therefore, Assail used at that time will likely target the early low populations of SWD. Growers in some areas have added 1lb/A of sugar as a feeding stimulant, which makes the Assail a more effective control.

Plum Curculio (PC): Some injury is present, but little to no adults remain active. This is no longer a pest of concern on most farms.

Tree Fruit Trap Counts – Southern Counties

Week Ending	STLM	TABM_A	CM	AM	OFM-A	DWB	OFM-P	TABM_P	LPTB	PTB
4/13					0		0			
4/20	14				5		0			
4/27	0				51		1			
5/3	19				51		1			
5/10	41	0	3		36		5	0		
5/17	21	2	12		15		6	4	27	
5/24	1	10	6		6	3	1	7	34	
5/31	1	4	3		10	53	2	28	52	

Tree Fruit Trap Counts – Northern Counties

Week Ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OBLR	OFM-P	TABM-P	LPTB	PTB
4/13	1										
4/20	2							0			
4/27	71.5		0					1.1			
5/3	41		0.0		3.5			1.3			
5/10	91.5	0.0	0.0		31			18.2	0.0	0.0	
5/17	67.5	0.0	4.5		57.7			21.4	0.0	0.0	
5/24	35.5	2.3	5.6		12.7			4.5	1.4	10.4	0
5/31	18.3	5.6	9.3		4.5	1		2.3	6.4	25.8	0.3

Blueberry Trap Counts – Atlantic County

Week Ending	CBFW		
5/24	1.2		
5/31	6.0		

Blueberry Trap Counts – Burlington County

Week Ending	CBFW		
5/24	2		
5/31	0.13		