

# Rutgers Fruit Focus Newsletter

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### **June 8, 2013**

**Weather and Rain-** tropical storm Andrea is dumping excessive amounts of rainfall on most of New Jersey, we had 3.3 inches already at Rutgers Snyder Farm.

**All orchards will need to be covered up after this rain.**

**BMSB-** see attached map- first emergence occurred more than a week in southern NJ at 285 degree days base 57 according to Dr. Anne Neilson our tree fruit extension entomologist, nymphs are now being observed in south Jersey orchards. We saw our first adults at Snyder Farm, Hunterdon County on Wednesday 6/5 as well as fresh egg mass's. After this rain it is time to treat for us. Kris Holstrum and our IPM team are again generating the BMSB maps from the vegetable IPM black light traps located throughout the state. This past week one hot spot was observed on the Somerset Hunterdon border and one in a peach block in Hacketstown, NJ.

**Twilight Fruit Meeting-** Tougas Family Farm, Northboro, Massachusetts

As many of you know Mo Tougas is just past president of the International Fruit Tree Association. He farms with son Andre and Spouse Phyllis. They have one of the outstanding PYO orchard operations in the Northeast. He was also selected by American Fruit Grower Magazine as the outstanding fruit grower of the year 2 years ago. It's a long haul for any NJ grower but seeing his operation, tall spindle apple systems, new production technique's including summer hedging of apple, would make the trip worth while for sure.

There will be a fruit twilight meeting next Tuesday, June 18, 5:30-8:30 PM at Tougas Family Farm, 246 Ball St., Northboro, MA.

Massachusetts Pesticide re-certification credit(s) will be offered.

A light meal will be served.

Special guest: Win Cowgill, Rutgers Extension. Topics to be covered may include: tunnel sprayer; apple tree hedging on tall spindle; a review of chemical thinning in 2013; rescue thinning opportunity; enhancing return bloom; and current season's crop load management on young and older trees. Jon Clements, Dr. Wes Autio and Dr. Dan Cooley

Orchard tour will include fruiting wall apple, older tall spindle apple, quad-v peaches, and a young cherry planting.

**Copper on Peaches- Sweet-N-Up** peach cultivar is sensitive to copper- *Kocide is the copper that's been considered the replacement for Tencop on peaches for Bacterial Spot control.* I applied the label rate of Kocide copper @1.5 ounces/acre to all my peaches, over 60 cultivars. Sweet N Up peach was the only one effected, some spotting and yellowing from the copper. New leaves grew out fine and older affected leaves greened up as well after being set back for a week or so.

**Kocide fixed copper rate for Bacterial Spot on Peach-** note that Dr. Norm Lalancett has done significant work on copper for Bacterial Spot control on peach. His recommendations, found in the 2013 NJ Tree Fruit Production Guide on page 70, first cover- Page 88 table 6.4. Dr. Lalancett recommends Kocide at 0.75 -1.5 ounces alternated with antibiotic (Mycoshield, Fireline). Antibiotics do not have as long a residual as fixed coppers.

**Thionex-** note the peaches and cherries were removed from the labeled after July 31, 2012. Thionex can no longer be used on these crops in 2013. Thionex can no longer be used on pears after July 31, 2013 as well. Thionex is being phased out, and can be used in apples only until July of 2015

## **Apple Crop Load Management**

For most north Jersey growers we are done chemically thinning for this season, most fruit is 25-30MM or larger which will preclude additional chemical thinning. However you should still access your crop load by tree and block. If crop load is still excessive it will usually pay to hand thin and tune up your blocks to the desired crop load.

**Note** that hand thinning greater than 30 days after full bloom will not enhance return bloom the next year. It is a very narrow window to achieve return bloom with hand thinning.

## **Enhancing Return Bloom on Apple with Plant Growth Regulators** **Win Cowgill, Agricultural Agent and Wes Autio, Ph.D., Professor, University of Massachusetts-Amherst**

Apple growth is running about two weeks ahead of schedule so its time to be thinking about enhancing return bloom with PGR's.

Apple flower buds are formed in June and July for most varieties. Roughly 25-30 days after full bloom is the rule of thumb for the end of the thinning window, and the beginning of the flower bud development stage. Though this is a rough guideline, actual physiological responses are a result of degree-day accumulations.

In addition to utilizing the hormonal type chemical thinners Fruitone (NAA), Maxcel, Exilis Plus (6-Ba), Ethephon (Ethrel)) at the normal thinning windows both Fruitone (NAA) and Ethephon (Ethrel) can be also be applied in supplemental summer applications to enhance flower bud formation for the following season.

Approximately 4-6 weeks after full bloom, usually after June Drop, growers can begin using Ethephon or NAA applications to stimulate return bloom. The key marker is king fruit size on the two year old wood. See below.

### **Ethephon**

Ethephon is a synthetic compound that is broken down in plant tissue to form ethylene. When applied during flower bud development on apples (June-Early July), Ethephon can be effective in influencing return bloom.

Based on our research work at the Rutgers Snyder Farm we have changed our recommendations for Ethephon. We are suggesting 4 weekly applications of **Ethephon at 150 PPM which is 0.5 pints (8 ounces)/100 gallons beginning at 30-35 MM fruit size varieties that tend toward biannual bearing**. These would include Honeycrisp, Fuji, and Suncrisp. (Note Fuji and Suncrisp are very hard to thin after 25 MM fruit size is reached. 30MM fruit size on Fuji and Suncrisp is the time to begin Ethephon treatments at the 150 PPM rate.)

For the later maturing cultivars (October) 5-6 applications may be beneficial.

PGR's are always better applied TRV dilute but 100 gallons per acre should be a minimum target. Ethephon can be combined in your cover sprays as well to save trips through the orchard. Growers may wish to avoid late use of Ethephon on Macoun for bloom return as it has caused premature ripening in NY, or at least limit to two applications. NAA may be the better choice. Note: No more than 1-2 applications should be made on early maturing cultivars like Gingergold, Paulared and other August maturing varieties.

### **Non-Bearing Trees**

Ethrel on non-bearing apples can be used at 2-8 pints per acre (300-450 PPM) beginning 2-4 weeks after full bloom. However these trees should have filled their space and be ready to bear the following year. Tree growth with Ethrel will be reduced.

### **NAA**

Can also be used for return bloom. One approach is to consider use of NAA at 25 MM fruit size at 5-PPM and make repeat applications at 5ppm at 7-day intervals for at least 4 applications. West coast growers have experimented with up to 5 applications. Our work suggests that NAA may not be as effective as Ethephon. In Western New York they prefer NAA on Honeycrisp for return bloom; I have had better results at Rutgers Snyder with Ethephon on Honeycrisp.

**Cautions:** Ethephon applications at high temperatures and high rates can de-fruit trees, make sure the forecasted high temperatures for the day of application + 2 days will not be over 85°F. Temperatures over 85°F can cause severe fruit drop.

**Benefits:** Enhanced bloom the following year, breaking of a biennial cycle.

**Conclusion:** Growers considering the use of PGR's for return bloom need to be in tune with their orchard conditions before making any application. PGR's can be very beneficial to a grower's operation, but their use requires a careful understanding of all parameters their application can influence. *Begin slowly and follow all label rates, guidelines and precautions. The label is the law.*

**Note:** The above information was developed from research and observations in the Mid-Atlantic fruit growing region and research at the Rutgers Snyder Farm and the UMASS Cold Spring Orchard.

**Additional Note:** Make sure to download our *updated* fact sheet F131R **Enhancing Return Bloom on Apple with Plant Growth Regulators at:**

<http://www.umass.edu/fruitadvisor/factsheets/factsheets.html>

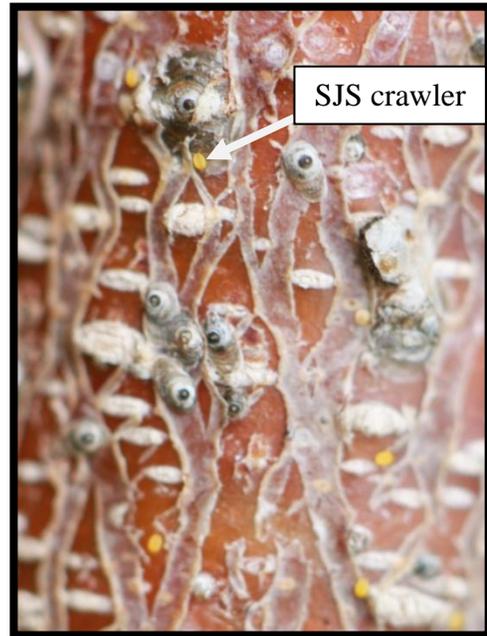
## Fruit IPM for the Week of 6/3/13

Dean Polk, David Schmitt, Gene Rizio and Atanas Atanassov

### Peach

**Bacterial Spot:** Symptoms are now appearing on fruit from infections that occurred 3 weeks ago. Even where control seems to be working, growers should maintain aggressive coverage around rains. Low rates of copper compounds such as Kocide 3000 at .75 to 1.5 oz/A will suppress the disease. As always, the less water volume you use in the spray, then the less copper you can use before seeing phytotoxic effects. Spray volumes of less than 80 to 100 gpa have caused more leaf drop than higher volumes, especially in hot weather. The next 3 weeks will reveal the extent of injury from the very favorable weather for disease that occurred in May.

**San Jose Scale (SJS):** Scale crawlers are now active in southern counties. The best materials include Esteem and Centaur, and Movento. 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 2 applications per year. The sprayer should be calibrated to soak all wood surfaces where there is known scale activity.



**Tufted Apple Budmoth (TABM):** 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	2 <sup>nd</sup> 6/7-6/9; 3 <sup>rd</sup> 6/13-6/15	1 <sup>st</sup> 6/4-6/7	1 <sup>st</sup> 6/3-6/8	1 <sup>st</sup> 6/7-6/8
Northern	1 <sup>st</sup> 6/8-9; 2 <sup>nd</sup> 6/15-17	1 <sup>st</sup> 6/11-13	1 <sup>st</sup> 6/10-16	1 <sup>st</sup> 6/13-16

**Brown Marmorated Stinkbug (BMSB):** Adults are now leaving overwintering sites and mass movements will occur soon. Egg masses have been found in orchards in Va. and MD. Captures in black light traps started late last week in southern NJ counties. Going forward, growers should start to include materials that are effective for BMSB control

### Apple

**Cicada Notes:** The first of 17-year periodical cicadas emerged in apple and peach orchards on a farm in Morris County on May 24. Appearance was pretty spontaneous and in the next two days

adult numbers were in very high. The grower sprayed on May 26 with a generic lambda-cyhalothrin (a pyrethroid insecticide - Grizzly, 5 oz/A). Counts taken on 5/31 indicated about a 99% kill. Only single adults (A) were seen in the canopy or flying around trees. All other cicadas were dead on the ground (B). No eggs had been laid, since the treatment came soon after emergence. Many cast skins remained are on the ground, trunks, or leaves (C). The orchard is partially surrounded by woods, which may have provided an additional non-sprayed host habitat. The cicada's most common habitat is woods/forests. Additional treatments may be needed in some cases, especially along border rows.



**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, even though 2 timed treatments may have already been applied. Several farms in northern counties are showing trap averages ranging from 20-30 moths per trap. This is still considered high pest pressure, and additional controls need to be applied under those circumstances.

Codling Moth Degree Day Timing								
County Area	Application and Insecticide Type							
	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, Turismo 250 DD + 550 DD	
DD	50	100	150	150	450	250	250	550
Southern	Past	Past	Past	Past	6/3	Past	Past	6/8
Northern	Past	Past	Past	Past	6/6-7	Past	Past	6/12-13

**Plum Curculio (PC):** Fresh egg injury was still being seen as of late this past week in several northern counties. If codling moth and PC sprays have not been applied, then use materials that are effective for both these insects. Avaunt, Imidan (or Guthion), and Voliam-Flexi are options.

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

**Apple Scab and Powdery Mildew:** Scab symptoms are severe in some infected orchards. Fruit lesions are present in a number of counties. The infections are most likely caused from fungicides being washed off from rain and resulting infection periods around May 7-12. Be aware of the weathering ability of fungicides, and reapply materials after sustained precipitation.

**Aphids: Spirea and Apple (green) Aphids:** Populations continue to build, and are at treatment levels in some orchards statewide. Our treatment threshold is set at 50% of the terminals infested with healthy colonies. Predation by lady beetles or other predators is occurring in many 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, however this does usually not occur until early July.

**Woolly Apple Aphid (WAA):** Woolly aphid colonies are now appearing in a few apple blocks in southern and northern counties. This secondary pest has become more of a problem in recent years, probably due to increased use of pyrethroids. Woolly 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, which is a new chemistry, 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 if good coverage is achieved (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 also needed.

**European Red Mite (ERM):** Mites are present in a few apple blocks statewide. Most levels are below the treatment threshold of 5 mites/leaf for late June through mid-July. 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 available. See the Commercial tree Fruit Production Guide for recommended materials. Effective materials include Agri-Flex and Agri-Mek, Envidor, Nextar, Onager, and Savey (on early, low populations). 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. Thionex is labeled for rust mite and should provide good suppression, but can only be used on pear until July 31 of this year.

## 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. *V. aestivalus* was 50% bloom on May 29 and *V. labrusca* was trace bloom on June 1. Concord was about 10% bloom on May 29. We are using the Skybit models to accumulate degree days and will provide updates later in the season.

## 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.

<b>Pest Event or Growth Stage</b>	<b>Approximate Date</b>	<b>2013 Observed Date</b>
Full Bloom Peach (Redhaven)	April 16 +/- 7 Days	April 11
1/4" Green Tip Red Delicious	March 27 +/- 10 Days	March 29
Oriental Fruit Moth Biofix	April 8 +/- 10 Days	April 16
Oriental Fruit Moth – 170 DD target	April 19 +/- 12 Days	May 2
Full Bloom Apple (Red Delicious)	April 20 +/- 9 Days	May 1
Petal Fall (Red Delicious)	April 27 +/- 13 Days	May 9
Shuck Split (Redhaven)	April 29 +/- 7 Days	May 8
White Peach Scale Crawler Emergence	May 29 +/- 7 Days	May 24
Second Generation Pear Psylla Hatch	May 29 +/- 3 Days	May 27
SJS Crawlers-first generation	June 6 +/- 4 Days	June 1
Pit Hardening	June 19 +/- 5 Days	Not yet observed

## **Blueberry**

**Aphids:** The frequency of positive shoot samples as well as infestation levels have increased since the previous week. Sampling shows that 83% of shoot samples were positive, and that 31% of the samples are above the 10% infestation level. This is about 3 times the infestation level previously seen, and indicates that aphids remain the number one insect target at this time, unless recently treated.

**Cranberry Fruitworm (CBFW):** Overall most farms do not seem to have pressure, but trap catches have increased in certain areas that have been problem spots in the past. One site in Burlington County had 38 adults in a 1 week count, and this was the 1<sup>st</sup> catch there this season. No fruit injury has been seen. If treatments have not been applied for CBFW, they effective insecticides should be used in the next cover, especially where trap counts are high.

**Putnam Scale:** Tape traps monitored on Tuesday 6/4 showed the start of crawler activity in the Hammonton area. There are 2 generations per season of this insect. If growers had scales present on the fruit during 2012, or known infested sited, then, treatment can be initiated for this 1<sup>st</sup> generation. Esteem has a 7 day PHI and is best used when crawlers first emerge. High volume coverage provides the best control.

**Plum Curculio (PC):** Only 1 PC adult was seen in 105 beating tray samples – or about 1% positive. This is a sharp drop since previous week. For the week ending 5/12 this value was 7% positive, the week after was 6%, followed by 4%. These 3 averages were taken from samples that had not as yet been treated with insecticides. The most recent value of 1% does reflect treated fields. However, known active sites including organic fields were sampled on 6/3 without any catch. Therefore PC activity is over for the season, and no longer needs to be treated on most farms. In total, we have seen a considerable amount of PC injury. Field fruit samples show that 52% of samples are positive for some level of pc injury. Growers should be aware of this as they pack the first Duke in a few weeks.

**Spotted Wing Drosophila (SWD):** Traps were collected and examined for the third time this season. No SWD adults have been captured in these traps as of this writing.

**Leafrollers and Other Lep:** There has been little change since the last newsletter. Sampling indicates that 11% of shoot samples were positive for low levels of larvae. None of the levels seen exceed the 5% threshold.

**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			
5/4	4	0	0		83		4	0		
5/11	3	1	27		17		2	0		
5/18	5	2	12		28		5	3	28	
5/25	1	16	17		23		5	15	38	
6/1	1	17	8		30		0	18	12	

**Tree Fruit Trap Counts – Northern Counties**

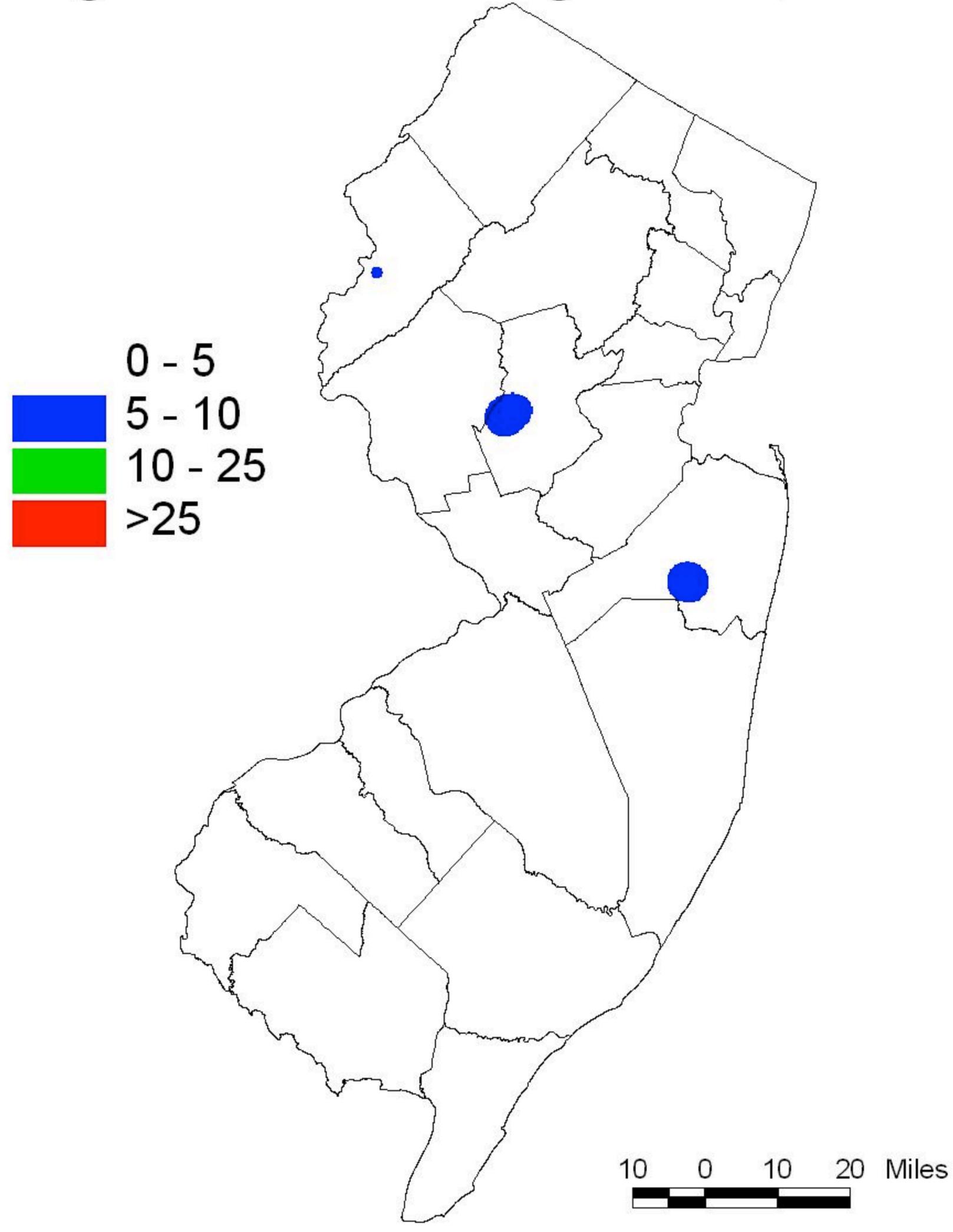
Week Ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OBLR	OFM-P	TABM-P	LPTB	PTB
4/13	1										
4/20	2							0			
4/27	71.5		0					1.1			
5/4	74		0					9.3	0		
5/11	87		1.3		29.4			14.1	0		
5/18	41	0	3.9		36			9.4	0	0	0
5/25	33.2	8.9	6.6		12.2			10.3	5.3	17.5	0
6/1	16.6	15.1	5		8.6			2.5	20.6	20	0

**Blueberry Insect Trap Counts - Atlantic County**

Week Ending	RBLR	CBFW	OBLR	SNLH	Or. Beetle	BBM	BMSB
4/13	116						
4/20	120						
4/27	100						
5/4	72	0					
5/11	28	0.01					
5/18	12.4	0.15					
5/25	3.1	0.1					
6/1	1.6	0.83					

<b>Blueberry Insect Trap Counts - Burlington County</b>							
Week Ending	RBLR	CBFW	OBLR	SNLH	Or. Beetle	BBM	BMSB
4/13	71						
4/20	44						
4/27	38						
5/4	26	0					
5/11	9	0					
5/18	1	0.04					
5/25	2	0.13					
6/1	0.2	2.1					

# Average Nightly Distribution of Adult Brown Marmorated Stink Bug for Week Ending June 5, 2013



Data collected by Kris Holmstrom and Joe Ingerson-Mahar and processed by Kris Holmstrom, RCE Veg. IPM Program