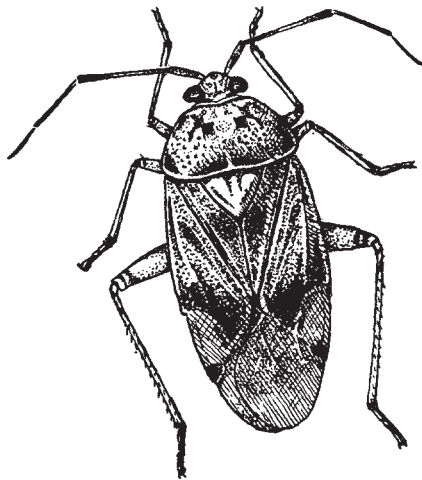


# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 6, 2006



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## Fruit IPM

*Dean Polk, Fruit IPM Agent, David Schmitt and Eugene Rizio, Program Associates, Tree Fruit IPM and Cesar Rodriguez-Saona, Ph.D., Specialist in Blueberry Entomology*

### Peach

✓ **Oriental Fruit Moth (OFM):** We are between generations in southern and central counties. Any growers in the southern and central parts of the state using mating disruption should have either ties applied, or be starting sprayable pheromone. Growers in northern counties can wait until about 6/12-13 or about 900 degree days since OFM biofix.

✓ **Tufted Apple Budmoth (TABM):** Treatments for TABM should be focused where TABM is a known problem. This includes most areas of the state Mercer County and south. Degree day (DD) timed treatments are outlined for either alternate middle (AM) applications where 4 sprays are needed per generation, full cover every middle (EM) applications where 2 sprays are needed per generation, or with the insect growth regulator (IGR), Intrepid, which should be applied full cover with 2 sprays per generation.

Timings for TABM control are in the following table, updated since last week.

County Area	Spray Type		
	AM	EM	Intrepid - EM
Southern	2 <sup>nd</sup> 6/7-8, 3 <sup>rd</sup> 6/11-12	1 <sup>st</sup> past, 2 <sup>nd</sup> 6/14-15	1 <sup>st</sup> 6/2-8, 2 <sup>nd</sup> 6/14-15
Central	2 <sup>nd</sup> 6/5-7, 3 <sup>rd</sup> 6/9-11	1 <sup>st</sup> past, 2 <sup>nd</sup> 6/13-14	1 <sup>st</sup> past, 2 <sup>nd</sup> 6/13-14
Northern	1 <sup>st</sup> - 6/9-11, 1 <sup>st</sup> 6/9-11	1 <sup>st</sup> 6/7-14	
	2 <sup>nd</sup> 6/10-12		

✓ **Catfacing Damage, Stinkbugs (SB) and Tarnished Plant Bugs (TPB):** Catfacing pressure increased during last week's hot weather, especially in weedy groundcovers. Dusky sting bugs and tarnished plant bugs are present in various orchards. One orchard in North Jersey had up to 23 TPB per 50 sweeps in an area with many flowering weeds in the ground cover. Up to 2-3% catfacing injury on the fruit is also present in some blocks where TPB populations are high. If using Intrepid or Spintor for TABM include an effective plant bug material such as Lannate, Imidan (3#/ac) or Diazinon. Diazinon will also control scale crawlers when they begin to emerge. Be aware that this is costly, and that it may be more economical to maintain a clean ground cover to minimize these pests.

SEE IPM ON PAGE 2

✓ **Brown Marmorated Stink Bugs:** On May 29 one of these insects was found on the Snyder Farm in Hunterdon County. This is a recently introduced pest species, and is the first observation of this insect in Hunterdon County, indicating that it is slowly moving south.

✓ **White Peach Scale (WPS), San Jose Scale (SJS):** Dr. Peter Shearer reports that the first generation of SJS crawlers began emergence on 5/26 in southern counties. This first generation of crawler emergence will continue for about 3-4 weeks. No white peach scale crawlers have been seen to date. Effective materials include Esteem, Centaur and Diazinon. Note that the new Diazinon label will limit use of the product to one pre-bloom and one post-bloom application, and applications must be made using an enclosed cab.

✓ **Bacterial Spot (BS):** Bacterial spot leaf infections are widespread in southern counties. Little fruit injury has been seen to date however symptoms take longer to appear on fruit than on leaves. The worst bacterial spot infections seem to be associated with strong winds and wetting. Apply antibiotics any time severe weather is in the forecast. Antibiotics generally provide 3-5 days protection. Applications made within 24 hours after a potential infection may help to suppress injury.

✓ **Rusty Spot:** Rusty spot is present in a number of peach blocks in both southern and northern orchards. While most sprays should have already been applied for this disease (through 2<sup>nd</sup> cover), it is doubtful that additional treatments will help. One additional treatment may be helpful in northern counties.

## Apple

✓ **European Apple Sawfly (EAS):** Although it seems like a perennial problem in blocks of mixed varieties, EAS damage is present again this year in some of those blocks.

In some orchards where petal fall spray was not conducted shortly after bloom, secondary fruit injury was

observed. Holes on fruit are big and covered with wet frass (strong smell). Fruits abort and fall down together with "June drop" fruit. Early petal fall spray is critical to prevent egg deposition or to kill first instars (newly hatched) larvae.

✓ **White Apple Leafhopper:** Various 3<sup>rd</sup>-5<sup>th</sup> instars nymphs and some young adults are present in a number of apple blocks. In one orchard in North Jersey, an average of 5 nymphs (and some adults) per leaf were seen. Remember that the action threshold is 3 leafhoppers per leaf (nymph and or adults). Heavy white speckling on the leaves was present in this block. Products of the neonicotinoid class on insecticides work well on this pest. See the tree fruit production guide for a complete list of products to use.

✓ **Apple Scab and Other Diseases:** Some scab infections are present in scattered apple blocks. One block was seen with over 50% leaf and 15% fruit infestation. This orchard had a history of high scab pressure last year, with sprays not timed accurately this year. Summer diseases, including black rot and white rot are the key diseases to control at present. Combinations with Topsin and Captan have been the most economical, and give broad spectrum control. Sovran is also effective on the rots as well as sooty blotch and fly speck. Use higher rates of Sovran where scab is present.

✓ **Codling Moth (CM):** The first catch or biofix points have been reached in all areas of the state. Timing for the first of 2 sprays for the 1<sup>st</sup> generation is set at 250DD<sub>50</sub> and again at 550DD for standard insecticides OPs, carbamates and pyrethroids, and the newer chemistries Assail and Calypso. The timings for the IGR's Intrepid and Esteem are at 150DD and again at 450DD. The following chart outlines these times for southern, central and northern counties. Growers should try to time sprays the best way possible and not cut insecticide rates.

SEE CODLING MOTH ON PAGE 3

## 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	2005 Observed Date
TABM Biofix	5/4 +/-10 days	May 6
CM Biofix	5/4 +/- 6 days	April 30
GAA colonies	5/5 +/-17 days	May 5
1ST WALH	5/6 +/-22 days	May 12
Blossom Blight Symptoms	5/8 +/-10 days	May 5
375 DD OFM	5/10 +/- 8 days	May 4
Rusty Spot	5/12 +/-10 days	May 15
OFM Flagging	5/13 +/- 2 days	May 19
first bacteria leaf	5/15 +/-21 days	May 23
CM 1st gen 150 DD target	5/19 +/- 3 days	May 15
SJS Crawlers	5/26 +/-11 days	May 26
CM 1st gen 250 DD target	5/28 +/- 7 days	May 22
2nd Pear Psylla hatch	5/31 +/- 1 days	May 29

The 2<sup>nd</sup> complete spray timing for CM generally coincides with timings for TABM. Materials used for TABM should also be very effective for CM.

County	Application and Insecticide Type	
	Area Standard Insecticides	IGR's
Southern	1 <sup>st</sup> past 2 <sup>nd</sup> 6/7	1 <sup>st</sup> past; 2 <sup>nd</sup> past
Central	1 <sup>st</sup> past 2 <sup>nd</sup> 6/7	1 <sup>st</sup> past; 2 <sup>nd</sup> past
Northern	1 <sup>st</sup> 5/29, 2 <sup>nd</sup> 6/13-14	Past, 2 <sup>nd</sup> 6/7-8

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

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

### Pear

✓ **Pear Psylla:** Newly hatched nymphs (1<sup>st</sup> instars) were found at the begging of this past week. High levels of Psylla were found in one orchard, with an average of 7% shoots infested and 12 nymphs per leaf. When this stage is present in your orchard, it is an excellent time for controls. Make sure to alternate materials for psylla control.

### Blueberry

✓ **Blueberry Maggot:** The first blueberry maggot flies were captured on yellow sticky boards on Monday, June 5. This sets the spray timing in motion for any field which may have berries exported to Canada. If on a calendar spray program, fields must be sprayed within 5 days of finding the first fly in the State. If on an IPM program, than you have more time. Please see below as quoted from the Canadian Protocol:

#### “1.7.2 Calendar Spray - timing

The National Plant Protection Organization or its designee will ensure timely dissemination of information on the first detection of blueberry maggot flies in Pherocon AM traps in all monitored areas, by notice or via newsletter accessible by fax, Internet or regular postal service mail.

Upon notification by the National Plant Protection Organization or its designee of the trapping of the maggot in the vicinity of the Monitored production area, the grower must commence chemical treatment as prescribed in 1.8.2.

#### 1.8 Chemical Controls

##### 1.8.1 Integrated Pest Management

When a blueberry maggot fly is found in a trap within a Monitored production area, the grower will be required to spray all the blueberry plants in the Monitored production area.

The plants must be sprayed within five days of finding the first fly in abandoned or wild areas in the vicinity of the Monitored production area, or within five days of finding the first fly within the Monitored production area. A second spraying must be carried out seven to ten days after the application of the first spray. Subsequent sprays must be applied within five days if another blueberry maggot fly is trapped within a Monitored production area until shipping ceases. Insecticides

approved for use on blueberries against blueberry maggot must be used at the rates, dosages and intervals specified on the pesticide label and according to provincial or state recommendations.”

✓ **Leafrollers and other Leps:** About 5% of tray samples have shown low levels of larvae. Recently we have begun to check shoot terminals for live larvae, with 15% of these samples being positive. The highest level seen was at 8% shoot infestation (8% of shoots infested). Fruit Injury -About 60 % of fruit samples have been positive for injury while 13% were found to have a 1% or greater level of damage.

✓ **Aphids:** Aphid populations are increasing, making aphids the primary insect target in the next spray. About 76% of samples were positive, and 37% were above the 10% infestation level. Provado and Actara remain the best treatments for aphids. However, if leafrollers/Leps are also a concern, then 1 lb of Lannate may be a more economical option.

✓ **Plum Curculio (PC):** Adult activity continues to decrease, but is still being found in 1% of our beating tray samples. Insecticides directed against PC are not economical at this point in time. About 64% of fruit samples show some level of injury and 16% are over the 1% damage level. No fresh scars have been seen this week.

✓ **Cranberry Fruitworm (CBFW):** The first fruit injury was first seen on June 1 in Hammonton in an area of extremely high trap counts. Over all 7% of our fruit samples have indicated early injury so far. Where pressure is significant, growers may need to reapply insecticide due to heavy and/or frequent rains. Last year we had some heavy rains about the same time as CBFW sprays were being applied. Some injury was seen in those fields which had high trap counts. Based on past injury levels, the occurrence of high trap counts, and heavy precipitation, we are suggesting a second insecticide application in those areas with high pest pressure.

✓ **Oriental Beetle:** The first adults were first seen near traps about June 1, with the highest trap count near 20, so far. With adults just starting to emerge, this is the start of the adult flight. Some growers have recently seen the large grubs present in the soil. These will be pupating and emerging as adults over the next several weeks.

**Admire Use Information:** Admire 2F (imidacloprid) is recommended to manage Oriental beetle grubs infesting blueberries in New Jersey. This material is most effective if targeted against early instar grubs.

Admire 2F should be applied in June to mid-July, at least 7 days before the first picking, or applied as a post harvest material. Grubs should be targeted at their youngest stage or as they hatch and are at the 1<sup>st</sup> and 2<sup>nd</sup> instars, and while still close to the soil surface. Admire has little effect on 3<sup>rd</sup> instars and older larvae. Older 3<sup>rd</sup> instars start to appear by mid August. Therefore, applications should be made well in advance of that date.

SEE ADMIRE ON PAGE 4

Because the first Oriental beetle eggs are not expected to hatch before late June, you should try to delay application as late as possible. For example, applications made in May simply degrade if exposed to the sun. However, Admire 2F has a long residual activity (>100 days) as long as the insecticide is not exposed directly to the sun.

Applications for early varieties like Weymouth can be made immediately after the last picking. If Duke picks by the 3<sup>rd</sup> week of June, then application should be conducted during the 2<sup>nd</sup> week of June or after harvest, between mid- and the end of July. Applications for Bluecrop are recommended 7 days before the first picking, in late June or early July. Similarly, applications for late season varieties like Elliott should be conducted

no later than end of July. Admire is most effective when applied before most eggs have hatched and grubs are still near the soil surface.

Please read and follow all the conditions and restrictions on the label on the container for this insecticide. Remember to irrigate the field at least for an hour before and after Admire 2F application (2-3 h preferred, especially after application). Begin applications late in the evening hours because this insecticide is sensitive to breakdown by UV radiation. No more than one application of Admire 2F can be used per season.

✓ **Cranberry Weevil (CBW):** Just as it did last season, weevil adults have returned to feed on young foliage. This is not a primary pest target at this time, but will be watched – more in future newsletters.

### Insect Trap Counts

#### Tree Fruit Trap Counts – Southern Counties

Week Ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
5/6/06	29	0	12		7		18	0	28	
5/13/06	41	0	6		24		13	4	57	
5/20/06	26	4	13		8		7	8	98	1
5/27/06	11	15	6		3		3	17	80	2
6/3/06	32	22	12		3		3	32	88	5

#### Tree Fruit Trap Counts – Northern Counties

Week Ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
5/6	580	1.8	1				36.7	2		
5/13	10	1.9	1				8.25	3.3		
5/27	15	5.2	3.5			28.5	24.8	9.7	78	
6/3	148.5	16.5	16.8			19.5	49.1	17.1	73.1	0.0

#### Blueberry Trap Counts – Atlantic County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/6		30				
5/13	6.4	10				
5/20	6.8	2.4	0			
5/27	7.3	0.2	1.4			
6/3	1.6	1.7	31.4			

#### Blueberry Trap Counts – Burlington County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/6		22				
5/13	19.8	4				
5/20	37.0	0.6	0			
5/27	27.9	0.1	2.0			
6/3	10.1	0.2	15.6			

Key: CBFW = Cranberry Fruitworm, RBLR = Redbanded Leafroller, OBLR = Obliquebanded Leafroller, SNLH = Sharpnosed Leafhopper, OB = Oriental Beetle, BBM = Blueberry Maggot

# Using Plant Growth Regulators for Return Bloom on Apple

Win Cowgill, Agricultural Agent

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. Apple flower buds are formed in June and July for most varieties.

In addition to utilizing the hormonal type chemical thinners (NAA, NAD, 6-Ba, Ethephon) at the normal thinning windows, research has shown that both NAA and Ethephon can be also be applied in supplemental applications to enhance flower bud formation for the following season.

Beginning 4-6 weeks after full bloom and after June Drop, growers can begin using Ethephon or NAA applications to stimulate return bloom. June Drop is the key time marker here, as the timing varies from year to year.

## Ethephon

Ethephon is a synthetic compound that is broken down in plant tissue to form ethylene. When used throughout flower bud development, Ethephon can be highly effective in influencing return bloom. *We suggest using Ethephon at 150 PPM which is 0.5 pints/100 gallons.*

New York recommends applying 2-3 weekly applications, depending on variety. Golden Delicious, Jonagold, Macoun and Mutsu require 2 sprays, while Sun crisp, Fuji, Honeycrisp require 3 applications. Growers may wish to avoid use of ethephon on Macoun for bloom return as it has caused premature ripening in New York. I have not seen that in northern New Jersey.

No more than 1-2 applications should be made on early maturing cultivars like Gingergold, Paulared and other August maturing varieties.

Annual cropping of Fuji has been attained by some West Coast growers with the calculated use of Ethrel. Growers have found that rates of 1 pint/a at 30 and 45 days after full bloom have allowed them to dramatically reduce the biannual cropping tendency of Fuji (note Fuji is very hard to thin so 30DAFB is not too soon to begin at the 150 PPM rate.)

**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 30 days after full bloom at 3-PPM and make repeat applications at 5ppm at 7-10 day intervals. The label calls for 2-3 applications on hard-to-thin cultivars. West Coast growers have experimented with up to 5 applications.

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.* □

# Conservation Approaches to Agricultural Water Use

As producers throughout the nation grow increasingly concerned about water scarcity, farmers, ranchers and agricultural educators are beginning to explore new, conservation-oriented approaches to water use. They are managing soil to improve infiltration, selecting drought-tolerant crops and native forages, and designing innovative runoff collection systems.

"Smart Water Use on Your Farm or Ranch," a new 16-page bulletin from the Sustainable Agriculture Network, spotlights innovative, SARE-funded research into a range of conservation options including soil management, such as using compost, conservation tillage and cover crops; plant management, featuring crop rotation, water-conserving plants and rangeland drought mitigation; and water management strategies such as low-volume irrigation and water recycling.

Preview or download the entire publication at [www.sare.org/publications/water.htm](http://www.sare.org/publications/water.htm). To order free print copies, please visit [www.sare.org/webstore](http://www.sare.org/webstore), call 301/504-5236 or email [san\\_assoc@sare.org](mailto:san_assoc@sare.org). Please provide the title requested, your name, shipping address, and telephone number when placing your order. For a full list of resources available from SAN, visit [www.sare.org/publications](http://www.sare.org/publications).

"Smart Water Use on Your Farm or Ranch" is published by the Sustainable Agriculture Network (SAN) for the Sustainable Agriculture Research and Education (SARE) program. SARE is funded by the Cooperative State Research, Education, and Extension Service (CSREES), USDA, and works with producers, researchers, and educators to promote farming systems that are profitable, environmentally sound, and good for communities. SAN operates under Cooperative Agreement with CSREES to develop and disseminate information about sustainable agriculture. For more information about grant opportunities and other resources, visit [www.sare.org](http://www.sare.org). □

## June 28 - Date to See a Leading Peach Research Station in the Eastern US

Jerome L. Frecon, Agricultural Agent

Those growers and others from associated industries will have the opportunity to view the latest in peach research on Wednesday evening, June 28, 2006 at Rutgers Agricultural Research & Extension Center (RAREC) on 121 Northville Road near Bridgeton, NJ. Dr. Dan Ward, new Extension Specialist in Pomology will discuss some of his research projects in peach science. Dr. Ward and Dr. Bill Nicholson, Director of the Center, will also discuss some of their established and newly planted wine grape plantings and the work that will be done to assist the New Jersey wine grape industry.

Dr Brad Majek, Specialist in Weed Science, and a nationally recognized expert in fruit tree weed control will demonstrate with Dr. Ward their work on ground cover management and mulching on new and established fruit plantings. Dr. Majek is getting some significant differences in peach tree growth and performance with the mulches he and Dr Ward are testing. A similar project is also being done on grapes.

Dr Peter Shearer is rapidly solidifying his reputation as a leading international scientist in fruit entomology. He will demonstrate and discuss his insect management research projects. He will also have poster displays of his work.



*Dr Peter Shearer, internationally known peach entomologist, discusses his peach research with growers on fruit tour at Rutgers.*

Dr Norman Lalancette, Specialist in Fruit Tree Pathology will also discuss and demonstrate his work on peach scab, rusty spot, and bacterial spot. Dr Lalancette will also discuss management of other disease problems in addition to these important diseases.

The center is also the home of a wide selection of the IR- 4 regional projects on fruit crops. Field researchers Larry Rossell and Melissa Zimmerman will discuss many of their projects on tree and small fruit. Dr George Hamilton, Specialist in Pest Management will be on hand to discuss pesticide storage and record keeping as a tour is given of the new pesticide handling facility at RAREC.

Other demonstrations and displays on fruit including some of the early ripening fruit varieties will also be presented. Most of the discussions and demonstrations will



*Chris Holton and Carol Veale, summer research technicians evaluate peach cultivars in the Post harvest Laboratory at RAREC.*

be conducted on a riding tour around parts of the center. After the tours, a barbecue supper will be served to registrants. New Jersey pesticide applicator units will also be provided at the conclusion of the tour.

Complete information on the program, tour and picnic is available at <http://gloucester.rcrc.rutgers.edu>. There is no charge for the meeting or supper. Attendees must register by calling or writing Jerome L. Frecon, Rutgers Cooperative Extension of Gloucester County, 1200 North Delsea Drive, Clayton, NJ 08312 or 856 307-6450 Ext 1. or by e-mail to [frecon@aesop.rutgers.edu](mailto:frecon@aesop.rutgers.edu). □

## Calendar of Events


**June 28, 2006 - 5:00 p.m.** - Twilight Fruit Research Meeting, Tour and Picnic, Rutgers Agricultural Research and Extension Center, Northville Rd., Bridgeton, N.J. Contact Jerry Frecon at RCRE of Gloucester County at 856 307-6450 Ext 1.

**July 27-30, 2006** - New Jersey Peach Festival, 4-H Fairgrounds Rt. 77 South of Mullica Hill, N.J. Contact Jerry Frecon at RCRE of Gloucester County at 856 307-6450 Ext. 1 or go to: <http://gloucester.rcrc.rutgers.edu/fairfest>.

**August 3, 2006, 10:00 a.m. - 7:00 p.m.** - Agricultural Innovations Day, Rutgers Agricultural Research and Extension Center, Northville Rd, Bridgeton, N.J. Contact Bill Nicholson at RAREC at 856 455-3100.

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For back issues, visit our web site at: [www.rce.rutgers.edu/pubs/plantandpestadvisory](http://www.rce.rutgers.edu/pubs/plantandpestadvisory).

**Pesticide User Responsibility:** Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCRE in your County.

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