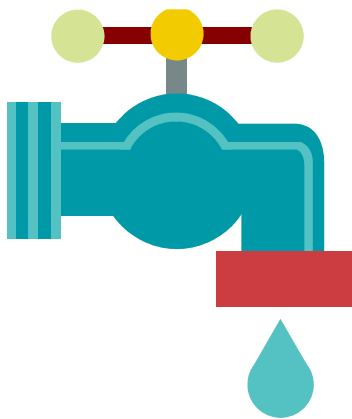


# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JULY 22, 2008



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## Drought and Water Use in Peach Trees

*Jerome L. Frecon, Agricultural Agent*

Many of you are experiencing very dry conditions and moisture stress on your peach and other fruit trees. Supplemental water is needed for not only sizing fruit but also to keep young trees growing. The following fact sheet on our drought web site may be helpful to you. The web address for this best management practice is <http://njaes.rutgers.edu/drought/pdfs/peachtreebmp.pdf>.

The following information was also copied from the University of Georgia Peach Production Guide by Dr. Kathy Taylor, Stone Fruit Horticulturist, UG, Byron, Georgia.

“Supplemental irrigation benefits peach tree growth, allowing the development of larger trees with greater fruiting wood structure and, therefore, greater fruiting potential earlier. In addition, supplemental irrigation allows the grower to regulate fruit size to some degree. Irrigation in the days before harvest will increase fruit size by ¼ to ½ inch. Take care during this phase to manage supplemental irrigation to size fruit without causing fruit cracking.

Providing supplemental irrigation prior to pit hardening when cell division is occurring adds to potential fruit size. Measures taken to increase cell division help guard against fruit cracking when irrigating in the month prior to harvest.

In peach, optimal productivity is experienced with rain or irrigation at intervals of no longer than one week. During peak water use periods, individual peach trees consume 36-45 gallons per tree per day. On a weekly basis, this is 252-315 gallons per tree. At a tree spacing of 16 ft. x 20 ft. (136 trees/acre), this comes to 34,272-42,840 gallons of water per acre of orchard. One acre-inch of water equals approximately 27,000 gallons. Therefore, actual water consumption for 1 acre of peach trees during peak water usage is between 1.3 and 1.6 acre-inches of water per week. Thus you should operate an irrigation system that delivers 12 gallons of water per tree per hour 21 to 26 hours weekly or 7 to 8.5 hours three days per week at peak demand if there has been no rainfall. □

# Managing Apple Harvest with ReTain® in 2008

Win Cowgill, Area Fruit Agent

This has been a wet, then dry, and now one of the hottest growing seasons on record in Northern NJ. Apple harvest is running a few days earlier than the historical norms and the current heat is pushing it earlier. Summer apples are being harvested now (Pristine on Monday at Rutgers Snyder Farm- Sunrise and Redfree in 10 days or so). Redfree is not quite ready for harvest; it usually comes in with Paulared for us. All of these apples have excellent eating quality and make good additions for direct sale markets.

With this heat we have had irrigation running all this week on both young and old trees.

At this time I anticipate that normal harvest dates (or a few days earlier depending on heat) will continue to hold for the Gala cultivars and Macintosh, early September for us in Hunterdon County.

New Jersey growers focus harvest management strategies for optimum fruit quality. Consumer demand, market, storage requirements and labor availability all influence harvest decisions. One tool that allows for increased flexibility in management decisions is the Retain® Plant Growth Regulator from Valent BioSciences.

Now is the time to consider the use of Retain for those cultivars this season.

Retain must be applied at least 3-4 weeks before anticipated harvest.

Retain is a harvest management tool that slows the maturation process. It is an excellent stop drop material that can delay fruit maturity from 7-10 days and give growers a longer picking window on many cultivars. Retain works by retarding the development of ethylene, the chemical that causes ripening. Retain will increase fruit firmness, decreased watercore and allow for longer cold storage. Retain may also indirectly enhance fruit size and color by allowing the fruit to remain on the tree longer.

**Note #1 Gala strains:** - the full rate of Retain may delay harvest too much to tap the wholesale window and even the half rate will delay maturity slightly. For some growers it is a tradeoff for the absolute early market vs. the ability with Retain to hang the fruit a bit longer to get color and size. For the PYO market Retain is a wonderful tool on Gala and most other cultivars. At the Rutgers Snyder Farm we have used Retain for three years at one half rate on Gala cv. Treeco#2 without delaying the maturity excessively and gaining fruit firmness. *Consider using 1/2 rate of Retain on Gala at 3 weeks before anticipated harvest. For the Rutgers Snyder Farm in Hunterdon County this will be about August 5.*

**Note #2 – Macintosh-** For Macs we are recommending going back to the traditional timing for retain on Macs. Dr. Terence Robinson has suggested Hudson Valley growers apply Retain 3 weeks prior to the normal harvest date for McIntosh this year based on research and observations last year. In addition, he suggests applying 5 ppm NAA one week before the Retain application (4 weeks before anticipated harvest). Dr. Robinson has estimated that the window for applying Retain to McIntosh in southern Hudson Valley blocks might open around August 10, which would be Aug 5-10 in Northern NJ. McIntosh is a high ethylene producing variety and as such does not always give the most consistent results with Macs. Our experience in NJ is that Retain reduces pre-harvest drop on McIntosh from 10-30%.

## General Comments on Retain

The active ingredient is a natural occurring product aminoethoxyvinylglycine (AVG), which is produced by fermentation. The fermentation process required to produce AVG is very difficult and very expensive. As a result, Retain retails for \$200 - \$240 per acre. Because of this, Retain should only be used in high value blocks with large crops of unblemished fruit.

Fruit treated with Retain can be picked during the normal harvest period for enhanced retention of firmness in regular cold storage, or harvest may be delayed, allowing the fruit to continue to grow and develop red color for an extended time.

Research also indicates that stem-end split (SES) and internal ring crack (IRC) may be reduced on susceptible varieties, such as Gala and Fuji, with the use of Retain. Although these disorders will not be eliminated with its use, Retain reduces the stress fluctuations that are thought to cause these disorders.

Retain must be applied three to five weeks prior to anticipated harvest to be effective, therefore it is essential growers carefully project ripening dates of each individual block where they plan to use Retain this season.

**Note #3 -Retain is less effective** when applied to drought and heat stressed trees. Keep this in mind when deciding when to treat and which blocks to treat.

## Important considerations to follow with Retain® applications in New Jersey

- Use the full rate of Retain® (1 pouch or 333 grams/ Acre of formulated product) with an organosilicone surfactant at 0.05% to 0.10 % (v/v).
- ONLY use one of the approved organosilicone surfactants such as: Silwet L77 at 6.5-13 fluid ounces per 100 gallons, or Sylguard 309 at 6.5-13 fluid ounces per 100 gallons. When high temperatures prevail, the lower rate of surfactant is recommended.
- **Apply 3-4 weeks before anticipated harvest (21 day PHI).**

SEE RETAIN ON PAGE 4

# Fruit IPM

Dean Polk, Fruit IPM Agent and David Schmitt, Eugene Rizio and Atanas Atanassov, Ph.D., Program Associates, Tree Fruit IPM

## Peach

✓ **Rots:** Recently low levels of rotting fruit have been found in southern county orchards. So far, rot is being found on damaged and malformed fruit only. If the right weather conditions develop rot pressure could increase. Remember to start a good fungicide program at final swell. The more favorable the rot conditions, then the earlier a pre-harvest fungicide program should begin. Given our present conditions, this means about 1-2+ weeks prior to the first picking.

✓ **Oriental Fruit Moth (OFM):** Trap counts indicate a low pressure on most farms. The second of 2 (full) sprays is due now in southern counties and by the end of the week in central counties. Degree-day spray timings are as follows, updated since last week:

Oriental Fruit Moth Degree Day Spray Timing 3 <sup>rd</sup> Brood		
County Area	Application and Insecticide Type	
	Standard Insecticides	IGR's - Intrepid
Gloucester Co.	1 <sup>st</sup> past, 2 <sup>nd</sup> trt 7/26-28	1 <sup>st</sup> trt past, 2 <sup>nd</sup> 7/25-27
Monmouth Co.	1 <sup>st</sup> past, 2 <sup>nd</sup> trt 7/29-31	1 <sup>st</sup> trt past, 2 <sup>nd</sup> 7/27-29
Hunterdon Co.	1 <sup>st</sup> 7/24-27	1 <sup>st</sup> trt 7/23-26

✓ **Tufted Apple Budmoth (TABM):** So far the pressure is fairly low as indicated by trap counts. However trap counts are increasing in some orchards. The 1<sup>st</sup> of four alternate middle sprays are due by early next week in southern counties. A 2<sup>nd</sup> application will be due about the beginning of the following week. See table below for timings, and the TFPG for materials. Every effort should be made to use adequate spray volume, since egg masses need to be covered, as well as emerging larvae. Larvae will spin down and find protected areas in which to feed shortly after emergence, and therefore are very difficult to reach with spray volumes concentrated below 80 to 100 gal/Ac. If using alternate middle sprays, do not stretch the spray interval, and apply insecticides no more than 7 days apart. Timings are updated in the following table:

Tufted Apple Budmoth Degree Day Spray Timing 2 <sup>nd</sup> Brood				
County Area	Application and Insecticide Type			
	Std Materials - AM	Std Materials - EM	Intrepid - EM	Bt-EM
Southern	1 <sup>st</sup> 7/28-30	1 <sup>st</sup> about 7/30-8/1	1 <sup>st</sup> about 8/1-4	1 <sup>st</sup> about 8/1-4
Central	1 <sup>st</sup> 7/29-31	1 <sup>st</sup> about 8/1-4	1 <sup>st</sup> about 8/4-7	1 <sup>st</sup> about 8/4-7
Northern	About 1 <sup>st</sup> 8/5-6	About 1 <sup>st</sup> 8/8	About 8/12	About 8/12

✓ **San Jose Scale (SJS):** Second generation scale crawlers are active. Esteem (14 day PHI); Centaur (14 day PHI); and Diazinon 50W (21 Day PHI) are labeled for scale control. If using Diazinon use the full labeled rate to also control OFM and plant bugs. As always, dilute spray volume is important for control. Captan and Diazinon combinations may result in phytotoxicity.

✓ **Catfacing Insects:** Overall pressure is low, but in northern counties on early varieties (PF 1, PF 5, Early Red Free, and Sentry), TPB and stink bugs are major pest problems, with and up to 3% fruit injury recently seen.

## Apple

✓ **Codling Moth (CM):** Most of the 2<sup>nd</sup> generation sprays have been completed for this pest. Please see table below. If both sprays have been applied, then no further insecticides are needed for CM, unless trap counts continue to exceed 5 males per trap per week. The following chart updates timings outlined in last week's newsletter. Injury began to appear about ten days ago where these timings were missed.

Codling Moth Degree Day Spray Timing - Brood 2		
Area	Application and Insecticide Type	
	Standard Insecticides - OP's, Carbamates, Pyrethroids, Avaunt, Assail, Calypso	IGR's - Esteem, Intrepid, Rimon
Gloucester Co.	past	past
Monmouth Co.	past	past
Hunterdon Co.	1 <sup>st</sup> - past; 2 <sup>nd</sup> - about 7/26-7/29	1 <sup>st</sup> - past 2 <sup>nd</sup> - about 7/22-7/24

✓ **Diseases:** Sooty blotch and flyspeck, as well as the summer rots are all concerns, especially if the weather pattern turns wet or very humid. Make sure not to stretch spray intervals during favorable weather, especially on fresh market fruit. Be sure to use enough water to ensure good coverage, especially in dense canopies. If using contact materials such as captan and Ziram for protection, renew coverage as soon as possible after 1" rain. More effective materials such as Pristine or Sovran can weather up to two inches of rain.

✓ **Tufted Apple Budmoth (TABM) and San Jose Scale (SJS):** See peach section above. Note that Esteem has a 45 day PHI for apple.

SEE IPM ON PAGE 4

## 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	2008 Observed Date
CM 2nd gen 1150 DD target (IGR timing)	July 07+/- 04 days	July 4
CM 2nd gen 1250 DD target (Standard timing)	July 15 +/- 10 days	July 8
CM 2nd gen 1450 DD target (IGR timing)	July 18+/- 04 days	July 16
CM 2nd gen 1550 DD target (Standard timing)	July 21+/- 03 days	July 19
TABM - 2nd Gen DD target begins	August 07 +/- 09 days	Not Yet Observed
TABM - 2nd Gen DD target ends	August 23 +/- 04 days	Not Yet Observed

**Note: There is no blueberry information for this week.**

## Trap Counts

### Tree Fruit

#### Southern Counties

Weekend	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
7/5	811	1	0		0	87	0	2	33	19
7/12	499	1	2	0	2	21	0	1	45	6
7/19	545	0	4		3	58	0	2	38	16

#### Northern Counties

Weekend	STLM	TABM-A	CM	AM	DWB	OFM-P	TABM-P	LPTB	PTB	OBLR
7/5	786	7	1		3	2	4	35	2	1
7/12	791.8	1.5	0.6		1.9	2.2	3.6	23.4	1.2	0.5
7/19	615.4	0.3	0.5	<b>0.0</b>	0.3	1.7	0.3	24.2	0.9	0.0

## Blueberry

### Atlantic County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
7/5	0.1		11.8	1.3	0.3	1008
7/12	0.3		8.2	0.7	0.3	605.4

### Burlington County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
7/5	0.1		16.9	2.2	3.7	953.0
7/12	0.0		19.5	1.0	1.1	683.6

RETAIN FROM PAGE 2

- Retain® should be applied with a sufficient amount of water to ensure thorough wetting of the fruit and foliage while avoiding spray run-off. Adjust water volume based on tree size and spacing. Do not apply with alternate row spraying.
- For optimum results apply during periods of slow drying weather conditions. No rainfall or irrigation should occur within six hours of Retain® application.
- **Do not apply Retain® to trees under stress. They may not respond to the benefits of Retain®.**
- Do not tank mix Retain® with other agricultural products.
- NAA may be used according to label directions after the use of Retain if very long drop control is desired, or fruit begin to loosen. Be aware that NAA may accelerate fruit maturation.
- The interaction ethephon products with Retain® is not well understood but research continues

**Note: Remember there is a Stone Fruit Label for Retain.**

Retain has a full label for stone fruits (except cherry) in New Jersey for the 2008 growing season. Retain can be an excellent harvest management tool for peaches to time or split harvests. □

## Food Safety Series

Wesley Kline, Ph.D., Cumberland  
County Agricultural Agent

Questions continue to come in on a variety of topics on food safety and third party audits. Following are the most recent questions and my responses. If you have a question go to the website at:

<http://njveg.rutgers.edu/2-r-5foodsafety.html>  
or email me at [wkline@njaes.rutgers.edu](mailto:wkline@njaes.rutgers.edu).

### **Q - Why should I invest time and money on a traceback program?**

**A** – There is a good short answer: it may save you money. We have instances in the last two years where growers started labeling (with their own code) boxes. These growers had produce rejected by the buyer after shipping. In one case, the grower was able to prove through their coding that the produce was not theirs. In the second case, the buyer said the product they received had been shipped three days before and it was breaking down. When the grower looked at his code on the boxes, the product had been shipped 10 days before. This means the buyer held the product and was not able to use it or resell it. In both cases, coding the boxes saved the growers money. Even if they did not get reimbursement, the buyers now know the growers can trace their produce.

### **Q - Do I need a hairnet or jewelry policy for a third party audit?**

**A** – No! All you need to do is make a statement that the farm does not have restrictions on wearing jewelry or no hairnets are required in the packinghouse. If you do establish a policy, everyone must follow it.

### **Q - If my water test comes back positive for E. coli, what should I do?**

**A** – If the source was a well there are standard methods to treat the well before using. However, if the sample came from surface water it is more difficult. The source should be retested in either case to confirm the initial results. Surface water can be treated though the irrigation system, but you must have the right equipment to inject the disinfectant. □

## Pennsylvania Association of Winegrowers Annual Summer Vineyard Walk Around

With Dr. Richard Smart  
Waltz Vineyard, Manheim, PA  
August 12, 2008

### **PROGRAM:**

8:00 Registration and coffee

9:00 Introductions

9:05 Jan and Kim Waltz: Overview of high quality wine production at their vineyard

9:30 Growing Quality Wine Grapes in Eastern U.S. Covering key performance indicators such as:

- Creating a balanced vine
- Canopy management
- Fruit zone management
- Variety and site selection
- Health of planting materials

10:30 PAW Membership Drive Morning Break

10:45 The Art and Science of Canopy Management: a comparison of vertical trellis systems – Vertical Shoot Position and Scott-Henry

11:45 Drive to Lancaster Farm and Home Center – 1383 Arcadia Road, Lancaster. 717.394.6851.

Lancaster Farm and Home Center, Lancaster

12:30 Lunch is catered by Hess and sponsored by the Pennsylvania Wine Association.

- Introduction of distinguished guests
- Featuring a tasting of Pennsylvania wines

1:45 Effects of Climate Change on Wine Growing in the Eastern U.S.

2:30 Grower Panel and Dr. Smart: open questions with a focus on canopy management and high quality wine production and practices including:

- Vine density
- Training and trellis systems
- Rootstocks and clones for Eastern U.S.
- What is vine vigor and how to control it if you have it
- Vineyard floor management ideas and practices

Panel: Ed Boyce, Black Ankle Vineyard, MD; Galen Troxell, Galen Glen Vineyard, PA;

Brad Knapp, Pinnacle Ridge Vineyard, PA; Jim Quarella, Bell-view Vineyard, NJ.

4:00 Afternoon PAW membership drive, Q&A and adjourn

5:30 Grower dinner at Gibraltar Restaurant with Dr. Smart (please sign up for this event and bring wines to share.)

If you plan to come, please register as soon as possible. Registration and information are available on The Wine Grape web site at <http://winegrape.ag.psu.edu/#> or call Mark Chien's office at 717.394.6851. □

# Rutgers NJAES Tomato Tastings North and South

## Annual RAREC Tomato Tasting, Vegetable Twilight Meeting and Research Tour

Tuesday, August 12, 2008, 5:00 – 8:00 PM  
Rutgers Agricultural Research  
& Extension Center  
121 Northville Road, Bridgeton, NJ (Upper  
Deerfield)

We will tour the following research plots and have presentations by the investigators:

### TOMATO TASTING

Tomatoes being grown for evaluation at the center will be available for tasting surveys beginning at 5PM to 6PM before research field tours.

### EARLY HYBRID TOMATOES

The New Jersey Vegetable Growers Association sponsored this research to evaluate early commercial hybrids for flavor and yield. This study is in its second season.

### FRESH MARKET TOMATO BREEDING PROGRAM

The Rutgers Fresh Market Tomato Breeding Program is focusing on new, adapted semi-determinate varieties that feature earliness, uniform ripening and size, enhanced internal color, good flavor profile, and high overall yield/quality. The summer 2008 nursery includes approximately 120 breeding lines, some of which are nearing final selection for entry into performance trials.

### PEPPER PHYTOPHTHORA STUDIES

Dr. Andy Wyenandt continues to evaluate new breeding material and varieties for tolerance to phytophthora which is the number one disease problem in New Jersey peppers.

### PEPPER VARIETY TRIALS

New Jersey is the 5<sup>th</sup> largest pepper producing state in the nation and keeping up with the latest varieties for yield, quality and disease resistance is important for farm production. Variety research trials will be presented on this tour.

### PUMPKIN VARIETY TRIAL

Growers will have the opportunity to see small/pie type pumpkin varieties in this year's trial. Results will be available in the Fall of 2008.

Pesticide Recertification Credits have been requested for this meeting. Hope to see you!!

This is your opportunity to have plant, insect, disease, or weed samples identified.

For directions go to:

<http://njaes.rutgers.edu/centers/quickinfo.asp?RAREC>

*"A Taste of Jersey Fresh™"*

## **GREAT TOMATO TASTING**

August 27, 2008

3:00 pm – Dusk (Rain or Shine)

The Snyder Research and Extension Farm  
and The Melda C. Snyder Teaching Garden  
Pittstown, NJ (Hunterdon County)

- Over 80 tomato varieties, including the Rutgers University **Ramapo** tomato
- Culinary herbs & "chef's" gardens with a tasting of basil varieties
- Perennial beds of deer tolerant landscape plants
- Plants that can attract beneficial insects
- **Jersey Grown™** daylilies
- Columnar varieties of fruit trees for the home landscape
- A special presentation by canine search and rescue teams
- Wagon tours highlighting today's NJAES agricultural and horticultural research available throughout the event
- Rutgers Cooperative Extension faculty, staff and Master Gardeners to answer your gardening questions
- Door prize drawings throughout the event!

Registration – \$5.00 per person, free for children under 10

Please RSVP (908) 713-8980

For directions go to: [www.snyderfarm.rutgers.edu](http://www.snyderfarm.rutgers.edu)

**RUTGERS**

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**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 RCE in your County.

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