

# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 24, 2003

## Peach Trees Dying of “Wet Feet”

*Jerome L. Frecon, Agricultural Agent*



Many peach orchards in southern New Jersey are weakened and/or dying of “wet feet” or lack of oxygen in the soil. This is also called asphyxiation or drowning. The seventeen plus inches of rain we have had in the past 2½ months has greatly helped fruit size but certainly not on trees that are weakened or dying from lack of soil oxygen. Trees that had limited root growth due to last year’s drought and trees that are otherwise weakened from other abiotic or pathogenic factors are probably also more susceptible. Certainly *Phytophthora sp. root and collar rot* is and will be a factor in the continued decline of some of these trees.

Root growth starts early in the spring before flowers and leaves grow, particularly if the soil is not frozen and warm. Root growth slows down while fruit and shoots grow vigorously. However, roots will not grow and function in saturated or water logged soil. Trees show off-color, may wilt, leaves drop prematurely, fruit shrivel, and the bark may even gum and ooze. Roots on healthy trees will resume growth after fruit is harvested and well into early winter. Peach tree roots do not always go dormant in New Jersey soils.

The biggest factor is the site of some of our orchard blocks. Sites where water stands, and swales where water rushes across the field, or pockets should probably not have been planted in peach trees. During the growing season with the crop load on trees most cannot stand water-saturated soil for more than 72 hours. Many sandy loam and loamy sand soils that may seem well drained, have a clay or heavy subsoil or an impervious layer, resulting in water logging at varying depths of root growth and distribution that results in weak or dead trees. Some of these soils have been tilled and drained but many have not and are planted with trees. Many years we can get away with trees in these soils.

All peach trees should be planted on good well-drained soils. When the orchard is designed, of course a good soil conservation plan should be followed to lessen soil erosion and improve water drainage. If the field is flat, the building of beds or berms will benefit peach trees as long as they receive irrigation. Berms and beds should be from 6” to 18” high and at least 3 feet wide. Even planting a tree on flat ground with sandy loam or loam sands and then mounding it may have some benefit in improving drainage around the collar of the tree.

Try to correct water drainage problems as soon as you can get in the field on orchard blocks that have standing water. Try to aerate the soil

**SEE WET FEET ON PAGE 2**

## INSIDE

<b>Peach Trees Dying of “Wet Feet” .....</b>	<b>1</b>
<b>Poor Fruit Set in Virginia .....</b>	<b>2</b>
<b>Wine Grape Coffee Pot Meeting .....</b>	<b>3</b>
<b>Worker Protection Standard Inspections .....</b>	<b>3</b>
<b>Fruit IPM .....</b>	<b>4</b>
<b>Calendar of Events .....</b>	<b>6</b>
<b>Twilight Research Fruit Meeting .....</b>	<b>6</b>

by either cultivating the ground or at least mowing any competing plants that keep the soil from drying out. This will be very important near the maximum area of root growth and not outside the "drip line". In some soils with impervious layers or hardpans it may even benefit to sub soil without physically damaging the roots.

Trees declining from *Phytophthora sp* crown and root rot are frequently diagnosed as suffering from wet feet. This is amplified because these trees are and will be found in heavy or wet soils or sections of the orchards where water collects or is slow to drain. Both *Phytophthora* infected trees and those dying from wet feet have many of the same tree symptoms. If the field of peach trees does not improve after the soil has dried, then it may be of some benefit to apply pesticides to control the disease as described in our *Commercial Tree Fruit Production Guide*. Usually the *Phytophthora sp* can be diagnosed by digging around the trees and observing the reddish brown bark cankers around the crown or collar of the tree. There is usually a sharp contrast between the white or healthy tissues and those infected. While this is the characteristic symptom, based on research with Dr. Norman Lalancette, it has been almost impossible to isolate the species for confirmation of the symptoms. It is always difficult to identify which trees are healthy enough to respond to a treatment of a pesticide to control the disease. Additionally *Phytophthora sp.* infected trees may not have the crown or collar infection but may have many roots that are infected.

In conclusion I would say if trees are collapsing at this time it is probably due primarily to wet feet. □

## Poor Fruit Set in Virginia

Tony Wolf, Ph.D., Professor of Viticulture, Virginia Tech

Source: Wine Grape Information from Penn State electronic mail.

I've had five conversations from different growers this week about poor fruit set in their vineyards. The calls came from SE Virginia, SW Virginia, and northern Virginia. We saw similar problems last week with some varieties at our variety planting at Blackstone, particularly with Traminette. The problem appears either as poor fruit set, or deterioration of entire portions of the rachis (the cluster stem). Some of our Traminette vines at Blackstone only retained the major branches of the rachis, with no berry set. Sometimes the more distal clusters of a shoot exhibit normal set and yields may not be greatly affected.

What's going on? The shedding of a portion of the rachis (including the entire cluster) is likely related to the sustained cloudy weather that we've all experienced for the last 40 days or so. Vines in the pre-bloom period are at a low point in terms of root carbohydrate reserves. The cloudy weather aggravates the situation as nitrate-reductase activity can be reduced; reducing the conversion of mineral nitrogen into organic forms, and carbohydrate production suffers as leaves are not operating at optimal efficiency. You might notice a greater problem with poor fruit set on vines that are looking a little chlorotic (yellowish) now. When the carbohydrate supplies are insufficient, it appears that flower/fruit clusters are one of the first organs to suffer, and we see poor set and/or shedding of portions of the cluster (typically the basal cluster is most affected, but all clusters of the shoot may experience the deterioration). From our earlier work with bud necrosis, we can also predict a high incidence of bud necrosis (BN) developing this year on BN-susceptible varieties such as Riesling, Viognier, and Syrah.

Rain itself at bloom may also reduce fruit set for physical reasons, but I believe that the primary problem is more related to the prolonged, cloudy weather. An analogous situation is occurring in apples this season, with above-average self-thinning ("June drop") occurring with some of the apple varieties - and greater than expected thinning occurring where chemical thinning aides have been used.

The problem is probably much more complex than just a carbohydrate deprivation — hormones (cytokinins) produced in the roots are also important for fruit set. If vines suffer impaired root activity (as with saturated soils), the cytokinin supply to clusters can be expected to be reduced, leading to reduced set. Also, if shoots are rapidly extending/growing, there may be further competition between sources of carbohydrates and "sinks" for carbohydrates, including the clusters.

A further contributing factor can be stress imposed on the vines last season. If vines went into the 2002-2003 winter in a "compromised" state (overcropped, diseased foliage, early frost, etc.), that might well aggravate the problem that you're seeing this spring.

You might be seeing some botrytis in the senescent clusters, and this should be monitored and sprayed for if necessary, but still, I think the primary problem is one of poor weather. Unfortunately, except for praying for sun, there's not a lot you can do at this stage. The grower that I spoke with in southwest VA thought about hedging shoots severely and forcing second order shoots to develop which, for some varieties can be fruitful. It sounds severe, and I cannot give a wholesale recommendation to try this, but it might work with early-maturing varieties such as Malvasia or Muscat.

This may explain what you're seeing this spring - I realize it does not do much to solve the problem. Again, think 'sunny' and 'dry' thoughts.

Submitted by Jerome L. Frecon, Agricultural Agent. □

## Wine Grape Coffee Pot Meeting

Mark Chien, Wine Grape Agent, Penn State University Cooperative Extension

Source: Wine Grape Information from Penn State electronic mail.

Jim Travis, Extension Specialist and Professor in Plant Pathology, Penn State University Cooperative Extension, and I had two successful coffee pot meetings, despite the fact that we didn't serve coffee at either one and only short notice was given. This is a concept that we are borrowing from New York, where regular morning meetings between growers and extension take place at vineyards around Lake Erie and the Finger Lakes. Growers brought leaves and shoots for us to look at and we saw a lot of abiotic problems as well as the usual disease suspects. Hopefully, most of the former will fade as the weather warms.

It's always a bit scary to have a pathologist visit your vineyard. But it's also a good thing. Jim gave us a close up tour of a vineyard and managed to find fairly low levels of disease, primarily foliar botrytis, **phomopsis** and **black rot**. We talked a lot of spray programs up until now and what growers should be doing during the course of the season. Jim highlighted the fact that we are entering the critical pre bloom period in South East Pennsylvania and it is NOW that growers should be most careful about what, how much and when they spray, as opposed to later in the season when fruit is on the vines. This is a critical period for all FIVE of the primary diseases in wine grapes – **botrytis** finds itself in the mix this year because of the early fruit and leaf infections we have experienced. Follow the NY/PA spray recommendations (Editors' note: New Jersey has Pest Control Recommendations available through Rutgers Cooperative Extension Offices too).

Jim made some interesting points throughout the day. One that caught my attention is "Don't trust your instincts in making disease management decisions." I would agree with that, certainly for new growers. Veterans have a better sense of what to expect, although a year like this one may be a distant memory. The fact is, disease organisms are quite predictable once their biology is understood, and chemical controls are designed with exactly this in mind. One key "intuition" that we frequently encountered was the idea of spraying after it rained so the materials wouldn't get washed off. The truth is that during the wetting period a lot of infection is taking place and you need to have something in place to protect your leaves and fruit.

Most importantly, you should be scouting your vineyard more vigorously than ever before. That means on foot, at a pace that allows you to look deep into the canopy, such as it is now. Not from your ATV, or tractor, or couch, but walking, stopping and looking. Remember, most of the worst disease problems are inside the canopy, and some diseases, like **downy**, are best identified on the bottom of leaves.

Finally, as I mentioned before, devise a set of strategies based on a few different climatic scenarios for the season. Hot and dry. Wet and cool. Recognize that canopy management is an essential tool for disease control in any season, but particularly in a wet one. You and your wine maker will reap great benefits from judicious canopy management practices.

(Editors note Rutgers Cooperative Extension has an excellent diagnostic laboratory. Forms to collect and mail samples are available from your RCE County office or on the web at:

<http://www.rce.rutgers.edu/plantdiagnosticlab>)

Submitted by Jerome L. Frecon, Agricultural Agent. □

## Worker Protection Standard Inspections

Raymond J. Samulis, Agricultural Agent

Some growers have expressed concern over the seemingly abundant messages to expect DEP inspectors this year for both the Worker Protection Standards as well as irrigation issues. The Worker Protection Standards have been in place for many years; however, a little bit of review never hurts anyone. Growers have asked me what an average inspection for Worker Protection Standard might entail. If you will remember back a few years, one of the first parts of the Worker Protection Standard program was to establish a central location for information to be posted and available for the workers' review. In fact, a few years ago, our office was one of the first to produce a complete Worker Protection Standard package that could be used on the farm. Since that time, commercial companies like Gemplers now have complete posting packages, and also separate individual parts for the bulletin board. Some items that must be included on the bulletin board are the Worker Protection Standard poster, application records, and location of emergency facilities. Another part of the program entails the actual training of the workers, which can occur as a group function, and must include giving each worker a training booklet.

Another important part of the Worker Protection Standard program is the availability of a decontamination site that should include water, soap, towels, etc. Also, inspectors will most likely check for a plan to deal with the transportation of and assistance to workers in case of an emergency. It is a common technique for the inspectors to verify the truth of what the farmer said by asking the workers various questions about items available to them around the farm. Be sure to verify that the workers know where the bulletin board is, and that they are aware of the training materials that they should have. A total lack of knowledge by the workers of any of these will assure even closer

SEE WPS ON PAGE 5

# Fruit IPM

Dean Polk, Fruit IPM Agent

## Peach

✓ **Oriental Fruit Moth (OFM):** We are at about 1,100 DD since biofix in southern counties, about 987 DD in central counties, and just over 850 DD in northern counties. Second generation treatments will be due at degree day accumulations of 1100–1200DD, and again at 1450-1500 DD. This will be about 6/25-26 in southern counties, about 6/28-29 in central counties, and about 7/3-4 in northern counties.

✓ **Tarnished Plant Bug (TPB) and Other Catfacing Insects:** A few adults and some nymphs continue to be captured in and on the orchard floor. Pressure is low, but growers are cautioned to work ground cover operations around insecticide applications.

✓ **Thrips:** Thrips are starting to increase. All early nectarines should be treated starting at 3 weeks prior to harvest, or when split pits start to color.

✓ **Peach Scab:** The first visible signs of scab infection were seen this past Friday. Lesions were typical of early scab and not yet dark brown to black. Lesions were concentrated on the stem end, and are about 1/8" in diameter. Since scab takes 40 to 70 days to show up on the fruit, the first lesions usually become visible by mid to late June. In talking with Dr. Lalancette, it appears that (overwintering) lesions on the wood are still sporulating. Therefore, if even a little scab is found in your orchard, it could mean that considerably more will become visible and additional infections are still taking place. Captan or Topsin should continue to be used to augment the spray program under these conditions.

✓ **Bacterial Spot:** We have had some recent reports of severe foliar injury due to copper use. Upon examination of spray records, it was found that the injury was due to the use of Champ and other coppers not normally recommended for post bloom use. Some of this was at full label rates. Tennocop and Copper Count applied at low rates continue to result in minimal foliar injury.

✓ **Tufted Apple Budmoth (TABM):** See last week's note for timing sprays, updated here for Intrepid. If using Intrepid, then time 2 full cover sprays at 500 to 650DD (10-30% hatch), and again at 805-855DD (60-70% hatch). The second of these targets will be around 6/24-25 in southern counties, and around 6/28-30 in central counties. Target dates in northern counties are about 6/20-25 for the first spray, and about 7/2-4 for the second spray. These target dates apply for both peaches and apples.

## Apple

✓ **San Jose Scale (SJS):** SJS was mentioned last week under the peach section, but I am devoting a little space under apples in this week's edition. While crawlers emerged 2 weeks ago, they are already getting established and settling down. We saw scale on apple fruit this past Friday on one commercial farm in North Jersey where no oil was used this past Spring. If you were not able to get a good oil plus insecticide application on the dormant stage, then an application for the crawler stage can still be applied in problem areas.

✓ **Codling Moth (CM):** Trap counts show a very active population in specific orchards. We have seen counts as high as 57 moths per trap this past week. The second of 2 applications (standard insecticides) should be going on 6/22 (southern counties), 6/25 (central counties), and 6/29-30 (northern counties).

✓ **Green and Spirea Aphids (GAA, SA):** Aphid populations have reached 100% of terminals infested in some orchards, but 50% is the norm. Treatments have been initiated on a number of farms.

✓ **Spotted Tentiform Leafminer (STLM):** The second flight of adult moths is almost at a peak, as adults continue to lay eggs. As eggs hatch, sap feeding larvae will start feeding in the leaves. When an average of .5 to 1 total mines per leaf are present, then treatments for STLM are justified. At the present time, populations are low and treatments are not needed.

✓ **Summer Diseases (Sooty Blotch and Fly Speck):** If your orchard is free (or virtually free) of scab, then you should be concentrating on summer rots and sooty blotch and fly speck control. The spring rains have helped set up ideal disease conditions. Controls for these diseases should be included in all cover sprays for the remainder of the season. The addition of Topsin to a half rate of Captan remains the standard for summer disease control.

## Blueberry

✓ **Redbanded Leafroller and Other Leps.:** Very few larvae are being found, so no additional mention will be made unless populations increase in the second generation in July.

✓ **Aphids:** Aphids are still being found in about 70% of our samples. About 38% of samples show infestations at over 10% of terminals infested. Lannate continues to be used in place of Provado by some growers, but control has not been as good as with Provado.

✓ **Oriental Beetles:** Beetle adults are starting to be found, especially in the Hammonton area. Numbers are low, with a high of about 150 per trap (last week).

*SEE INSECT TRAP CAPTURES ON PAGE 5*

## Insect Trap Captures

### Tree Fruit - Southern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-A-STLM	TABM
5/9			56				129	137	
5/16			33	8			60	181	10
5/23	44		17	10	2		20	55	5
5/30	20		4	30	1		8	23	8
6/6	35		4	32	2		12	13	16
6/13	47	5	3	26	4		3	325	18
6/20	37	5	3	27	8		7	1952	21

### Northern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-A-STLM	TABM
5/23			6.3	4.1	4.6			59.3	10.6
5/30			8.3	2.6	3.7			75.0	3.2
6/6			8.2	6.4	5.6			7.0	6.0
6/13	58.5		12.6	15.0	7.3			10.0	11.4
6/20	31		9	24.6	12.1			326.7	16.8

### Blueberry - Atlantic County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/9		83.6				
5/16	0.2	21.2				
5/23	0.05	4.0				
5/30	0.18	0.3				
6/6	0.08	1.0				
6/13	1.65	2.13				
6/20	0.5	34.5		0.02	14	0

### Burlington County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/9		11.4				
5/16	0	6.4				
5/23	0.05	1.8				
5/30	0.2	0.3				
6/6	2.6	0.3				
6/13	3.36	0.0				
6/20	4.7	0.7		0	0	0

### WPS FROM PAGE 3

scrutiny on other items. While the abovementioned items are common to all types of farms, be aware that there are additional requirements for each specific type of operation. For example, nurseries and greenhouses have more specific requirements regarding reentry intervals and posting requirements where needed. Fortunately, our Rutgers web site has a new section on farm safety, which contains the complete checklist for Worker Protection Standard inspections. You can view it at <http://www.rce.rutgers.edu/farmsafety/>. This web site contains information on Worker Protection Standards as well as many other farm safety topics. Be sure to listen to the sound effects at the beginning!

Many of the county agricultural agents meet with various officials of the Bureau of Water Allocation of the DEP as well as with enforcement personnel. Due to continued water shortages and competition for water supplies, expect increased enforcement activities this summer. Enforcement inspections have already begun in Northern and Central New Jersey. Remember to keep your water use logbooks current. Our office still has a

supply of these pocket books we designed for keeping records of your water use. We were told that in the not too distant future, the DEP would be looking for comments regarding updating their regulations for agricultural water use. As agents, we are on top of this issue; however, it will also be imperative for growers to give input on how some of these proposed changes may effect their operation. We are currently having philosophical arguments with them as to whether the water allocation permits should reflect actual water used or water needed under extreme drought conditions where no rainfall occurs. All of the allocations were designed to reflect the latter in order to provide farmers with the necessary water. It will be in our best interest to continue protection of the water allocations as they are currently designed.

With increased competition for water in our state, this issue is not going away. Agriculture needs to be on the forefront of this issue and if farming is to be preserved in the "Garden State" farmers need adequate amounts of water to remain in business. Additionally, this state needs farmland and open space to benefit water resources and the environment. □

## Calendar of Events

**June 26, 2003** – Twilight Fruit Research Meeting – 5 p.m. Rutgers Agricultural Research and Extension Center (RAREC), 121 Northville Road, Bridgeton, NJ. Contact: Jerome L. Frecon 856-307-6450 ext 1.

**July 8, 2003** - Twilight Farm Tour of Organic Methods for Blueberry and Bramble Production - 4:30 p.m., Emery's Berry Patch, New Egypt, NJ. Contact: Terry at RCE of Monmouth County at 732-431-7260.

**August 20 - August 22, 2003** - North American Strawberry Growers Association Summer Tour, Park Inn & Suites, Brandywine Valley, PA and tours S. Jersey and S. PA. Contact: NASGA Business Office at: 526 Brittany Drive, State Colle, PA 16803, phone: 814-238-3364, fax: 814-238-7051 or e-mail: info@NASGA.org, or www.NASGA.org.

**September 3, 2003** – Fruit Variety Showcase, Gloucester County. Contact: Jerome L. Frecon 856-307-6450 ext. 1.

## Twilight Research Fruit Meeting

**Thursday, June 26, 2003, 5:00-9:00 p.m.**

**Rutgers Agricultural Research & Extension Center  
(RAREC)**

**121 Northville Rd**

**Bridgeton, NJ (Upper Deerfield Twp.)**

**(856) 455-3100**

You are invited to attend the RAREC Twilight Research Fruit Meeting and Farm Tour to see research plots and new spray technology demonstrations and hear about updates of stone and pome fruit research and management options. A catered supper will follow.

Several highlights include a demonstration of new sprayer technology for borer control by *Dr. Ted E. Cottrell, Research Entomologist, USDA-ARS, Southeastern Fruit and Tree Nut Research Laboratory, Byron, GA* This will be followed by a demonstration of a Proptec Horizontal Monoboom (Tower) Sprayer for reduced drift by *Mike Ledebuhr, Ledebuhr Industries, Inc.* *Dr. Norman Lalancette* will present information on management of bacterial spot and rusty spot of peach. *Erin Hitchner* will provide an overview of IR-4 fruit projects that hopefully will lead to new product registrations. *Dr. Peter Shearer* will discuss new trends in insect pest management. *Dr. Atanas Atanassov* will provide an overview and preliminary results of the eastern RAMP program designed to eliminate organophosphorus insecticide use in peach orchards. *Dr. Brad Majek* will cover orchard weed control and *Dr. Robert Belding* will present information on thinning peaches and his peach rootstock research. We will then enjoy a nice dinner and displays back at the Center pavilion. Weather permitting, we will return to the orchards after supper to observe sprayer deposition patterns using fluorescent UV dyes and black lights.



Please let us know if you are attending so we can get an estimated count for dinner. Contact Jerome L. Frecon at RCE of Gloucester County at 856-307-6450, e-mail: Gloucester@aesop.rutgers.edu, or call RAREC at 856-455-3100. We are looking forward to your attending. □

FIRST CLASS  
POSTAGE PAID  
PERMIT #576  
MILLTOWN, NJ 08850

## PLANT & PEST ADVISORY FRUIT EDITION - CONTRIBUTORS

### Rutgers Cooperative Extension Specialists

Robert Belding, Ph.D., Pomology

George Hamilton, Ph.D., Pest Management

Norman Lalancette, Ph.D., Plant Pathology

Sridhar Polavarapu, Ph.D., Entomology

Peter W. Shearer, Ph.D., Entomology

### NJAES/Cook College

Joseph Goffreda, Ph.D., Breeding

### Rutgers Cooperative Extension Agricultural Agents and Program Associates

Atlantic County, Gary C. Pavlis, Ph.D. (609-625-0056)

Gloucester County, Jerome L. Frecon (856-307-6450)

Hunterdon County, Winfred P. Cowgill, Jr. (908-788-1338)

Morris County, Peter J. Nitzsche (973-285-8300)

Warren County, William H. Tietjen (908-475-6505)

Fruit IPM, Dean Polk (609-758-7311)

Meredith Compton, Program Associate (908-788-1338)

Gene Rizio, Program Associate (856-566-2900)

David Schmitt, Program Associate (856-307-6450)

### NJAES Sustainable Agriculture Coordinator

Olga Wickerhauser

### Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES

Cindy Rovins, Crop Management Communications Editor

For back issues, visit our web site at:

[www.rce.rutgers.edu/pubs/plantandpestadvisory](http://www.rce.rutgers.edu/pubs/plantandpestadvisory).

Rutgers Cooperative Extension - NJAES  
U.S. DEPARTMENT OF AGRICULTURE  
Rutgers - The State University of New Jersey  
Plant & Pest Advisory  
18 College Farm Road  
Cook College  
New Brunswick, N.J. 08901-8551

Rutgers Cooperative Extension (RCE) provides information and educational services to all people without regard to sex, race, color, national origin, disability, or age. RCE is an Equal Opportunity Employer.

**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.

**Use of Trade Names:** No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

**Reproduction of Articles:** RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.