

# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 12, 2007



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## Wine Grape Diseases

*Peter V. Oudemans, Ph.D. Specialist, Plant Pathology*

The key to disease control is diagnosis. Knowing which diseases are active in your vineyard and when, can provide access to a wide variety of control options. For the conventional grower (i.e. non-organic) there are a lot of materials to choose from. Many products are quite specific to certain diseases and the buyer should be wary of silver bullets and snake oil.

Two diseases that are often confused are **downy** and **powdery mildew**. Although they may seem similar the control strategies involve very different chemical pesticide options. First of all both diseases can infect leaves, rachises and fruit. On leaves symptoms begin as yellowish spots that ultimately turn brown. Powdery mildew forms white airborne spores on the upper leaf surface whereas downy mildew produces its white spores on the underside of the leaf. Both diseases will infect fruit and cause significant crop loss and reduction in quality if not controlled. The fruit become resistant to infections 2-4 weeks following fruit set depending on the cultivar being grown.

Powdery mildew does not require free water (i.e. a film of water) for spores to germinate and, in fact, rainfall and high temperatures (>104 F) will kill the fungus. This is in contrast to downy mildew which requires free water on the plant surface to spread and germinate. Both diseases spread very quickly under favorable conditions and management is essential in most vineyards.

Based on the following table you can see how important it is to know the disease you are attempting to control when making a fungicide selection. It is also critical to understand resistance management. Some fungicides are considered high risk while others are lower risk. So using both types in a program is a very good practice. When high risk fungicides that have the same mode of action are used the fungi can develop. A good rule of thumb is to alternate types of fungicides in your spray program rather than to rely on one type solely. There are several groups such as the strobilurins (Pristine and Sovran) the triazoles (Bayleton, Elite, Nova etc.) and also products containing ridomil are extremely vulnerable to resistance development.

SEE VINEYARD FUNGICIDE TABLE ON PAGE 6

# Dwarf Apples and Dogwood Borer

Win Cowgill, County Agent and Dean Polk-IPM Agent

All apple trees on size controlling rootstocks should be periodically checked for infestation by the dogwood borer. *We have caught moths in Northern NJ orchards since the end of May and populations are on the increase.* Apple growers in our NJ IPM program have traps placed to monitor the adult moth. Infestations of this clearwing moth in apple are almost always **located in burrknots or graft unions** that are planted above ground level. Burrknots are aggregations of root initials that can develop on the above-ground portion of the rootstock; all commercial dwarfing and semi-dwarfing rootstocks have a tendency to develop burrknots. After infesting the burrknot the larvae continue to feed in other tissue and can severely weaken the tree.

It is important that we plant dwarf apples with the graft union at least four inches out of the ground to avoid self-rooting of the scion. However, the trade off is the development of burrknots, which are susceptible to the dogwood borer. Mark rootstock is known for this.

The adult dogwood borer moth seeks out these spots (burrknots) to lay eggs, particularly if they are surrounded by vegetation or protected by something, such as mouse guards or weeds. Moreover, mouse guards and weeds shield the lower trunk from exposure to insecticide cover sprays. Sustained feeding by dogwood borer at the graft union may severely weaken the tree at this juncture, or girdle the trunk and cause a slow decline in tree health. Orchards in which mouse guards are emplaced should be examined for signs of damage. The tight spiral plastic guards provide a perfect place for the borers to get established and are not recommended for this reason.

**Treatment-** Lorsban 4E has a supplemental label for dogwood borer control on apple. Since Lorsban remains in the tissue you will also control the larvae from any egg laying occurring in the months of June and July as well as any that has occurred to date. A second application may be more effective than one application, according to work done in NY State.. The best control is achieved with dilute handgun applications.

The following directions and restrictions are from the label:

Mix with water and apply directly to trunk from a distance of no more than 4 ft using low volume handgun or shielded spray equipment.

Do not allow spray to contact foliage or fruit. Up to 2 applications may be made with a minimum spray interval of 14 days between applications.

## Restrictions:

- Treat only the lower 4 feet of the apple tree trunk.
- Do not make more than two applications per year for borer control.
- Do not apply when wind speed is greater than 10 mph.
- Do not apply within 28 days of harvest (watch your PHI on early maturing cultivars)

White latex paint brushed/sprayed on the exposed portion of the rootstock will help prevent new infestations of the borers, and also protect against southwest injury to the bark. We utilize a white wash of about 50% white latex with low acrylics and 50% water to spray all dwarf rootstocks in the fall to prevent southwest injury.

## Other Sources of Information

Cornell has a great fact sheet on dogwood borers in fruit trees that can be found on their IPM web site at: <http://www.nysipm.cornell.edu/factsheets/treefruit/pests/dwb/dwb.asp>. □

# Fruit IPM

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

## Peach

✓ **Catfacing Damage, Stinkbugs (SB) and Tarnished Plant Bugs (TPB):** Catfacing insects are a key pest as summer begins. If using Intrepid or Spintor for TABM include an effective plant bug material such as Thiodan; Lannate; Imidan (3 #/ ac); or Diazinon. Diazinon will also control scale crawlers emerging now. Any of the pyrethroids will also provide excellent catfacing insect control, and control OFM and TABM. While they initially cost less than many of the alternatives, their use is likely to kill mite predators, and therefore cause additional use of miticides. Lannate will also control most catfacing insects (weak on PC), thrips, low aphid populations, and OFM, but can also be disruptive to mite predators. **Note that Thiodan has a 30 day PHI. Captan/Diazinon combinations are known to cause phytotoxicity.**

✓ **Oriental Fruit Moth (OFM):** As second flight adults start to emerge, the first treatments will be due about the middle of the month in southern counties, and about 8-10 days later in northern counties. These will mate and lay eggs over the next several weeks. See table below:

OFM Treatment Timings – 2 <sup>nd</sup> Generation, 2 Sprays/Generation		
County / Region	Standard Insecticides	Intrepid
Gloucester – Southern	1 <sup>st</sup> about 6/16-19	1 <sup>st</sup> about 6/14-16
Monmouth – Central	1 <sup>st</sup> about 6/18-20	1 <sup>st</sup> about 6/16-18
Hunterdon - Northern	After 6/24	After 6/24

✓ **Bacterial Spot:** Bacterial spot infections continue to be present in southern counties. Copper sprays should be maintained and reapplied after heavy rains. Coppers are protectants only and are not systemic. If significant new growth and an infection period occur after a copper application, then that new growth is not protected. The best protection is when fresh copper is applied 24 to 36 hr prior to an infection period. Mycoshield or Flame Out also may be used. These are systemic materials and will provide about 3-5 days protection, and possibly 24 hours “back action” to suppress new infections.

✓ **Tufted Apple Budmoth (TABM):** Timings for TABM control are in the following table, updated since last week. Larvae are still emerging and eggs are about 40% hatched in southern counties.

TABM Timing				
County Area	Spray Type			
	Standard Insecticides - AM	Standard Insecticides - EM	Intrepid - EM	Bt-EM
Southern	3 <sup>rd</sup> 6/10-11, 4 <sup>th</sup> 6/15-16	2 <sup>nd</sup> 6/13-15	2 <sup>nd</sup> 6/13-15	2 <sup>nd</sup> 6/13-15
Central	3 <sup>rd</sup> 6/11-13, 4 <sup>th</sup> 6/17-18	2 <sup>nd</sup> 6/14-16	2 <sup>nd</sup> 6/14-16	2 <sup>nd</sup> 6/14-16
Northern	2 <sup>nd</sup> 6/10-11, 3 <sup>rd</sup> 6/15-17, 4 <sup>th</sup> 6/21-22	1 <sup>st</sup> 6/7-9, 2 <sup>nd</sup> 6/18-19	1 <sup>st</sup> 6/5-11, 2 <sup>nd</sup> 6/18-19	1 <sup>st</sup> 6/9-11, 2 <sup>nd</sup> 6/18-19

✓ **Thrips:** Thrips were observed on nectarines in one southern orchard last week. If your farm has a history of thrips problems: Spintor @ 6-8 ozs. applied now for TABM control will also provide thrips control.

✓ **Anthracnose:** Wet seasons are favorable for anthracnose infections. This is a disease we rarely have a problem with, but it has been showing up on a more frequent basis. The varieties Harrow Beauty, Snow Giant, and Sugar Giant seem to be particularly susceptible. Growers may find it useful to protect against anthracnose, especially in blocks that have a history of the disease. For all practical purposes this means avoiding the use of sulfur in those blocks, and continuing using Captan for the next several weeks.

✓ **Peach Scab (PS):** Peach scab symptoms begin to appear in mid June. Nothing can be done now to prevent early infection symptoms from appearing. Infections may still occur in orchards that had high levels of scab last season. If growers have already started a scab program in high pressure blocks, continued use of Captan would be the logical choice at the present time. One early season fruit infection was seen last week.

## Apple

✓ **Apple Scab and Other Diseases:** Scab is present in very few orchards statewide at present. Summer diseases, including sooty blotch, fly speck, black rot and white rot are the key diseases to control. 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. Growers should begin to shift away from EBDCs, which have a limit of 21 pounds/acre and a 77 day PHI. A combination of 3# Captan 50W (2# Captan 80) + 3# Ziram has provided acceptable control in past years, although Ziram is somewhat weak on white rot and black rot. Where bitter rot has been a problem, avoid continued use of Topsin, since it is weak on that disease. Pristine can also be use for all the above diseases, but can be costly.

SEE IPM ON PAGE 4

✓ **Codling Moth (CM):** Degree day based spray timings are now past in all growing regions. Additional sprays are needed only if trap counts remain above 5 moths/trap 7-10 days after the last insecticide application.

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

✓ **Aphids: Spirea and Apple (green) Aphids:** Populations continue to build, and are near treatment levels in many southern orchards. Our treatment threshold is set at 50% of the terminals infested with healthy colonies. Since this is a critical time for mite predators to build up, try to avoid the use of Lannate. The best aphicides include Provento, Actara, Assail, and Calypso. Of those, Assail and Calypso have activity on both Codling Moth (CM) and Oriental Fruit Moth (OFM) when timed correctly and rates are adjusted for those pests. The broader spectrum control will come at the cost of increased rates. However, even with the increased rates, a higher rate of a single material may be more economical than a combination of 2 materials. Assail rates (oz/Ac) for various pests are as follows: Aphids: 1.1-1.7, Leafminers: 1.1, Leafhoppers: 1.1-1.7, Codling Moth: 1.7-3.4, Oriental Fruit Moth: 2.3-3.4, Apple Maggot: 3.4. Calypso rates (oz/Ac) are: Aphids, Leafminers, Leafhoppers, Plant bugs (Mirids), and Japanese Beetle: 2-4 oz; Apple Maggot, Codling Moth, Oriental Fruit Moth, Plum Curculio, European Apple Sawfly: 4-8 oz. Use higher rates for higher populations and larger trees.

✓ **European Red Mite (ERM):** Mites have been found at treatment level in several Red Delicious orchards. Treatment level for May-early June is an average of 2 mites/leaf. In late June the treatment level will increase to an average of 5 mites/leaf. There are several miticides available for use on apple. With many options to choose from, growers should opt to rotate chemistries to avoid resistance. See the production guide for recommended materials and rates.

### 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	2007 Observed Date
Bact. Spot Leaf Symptoms observed	May 15 +/- 21 Days	May 22
Rusty Spot symptoms observed	May 12 +/- 10 Days	May 25
OFM Flagging observed	May 15 +/- 04 Days	May 25
CM 1st generation 250 DD target	May 28 +/- 07 Days	May 25
TABM 1st gen. 475 DD target (start)	June 02 +/- 07 Days	June 1
Peach Scab symptoms	June 14 +/- 13 days	June 1
2nd Pear Psylla hatch	May 30 +/- 02 Days	June 2
CM 1st generation 450 DD target	June 04 +/- 08 Days	June 3
CM 1st generation 550 DD target	June 09 +/- 07 Days	June 8

### Blueberry

✓ **Aphids:** Population levels are up slightly since last week. About 71% of samples have been positive for aphids, with 28% of all samples exceeding the 10% infestation level. Aphid populations are now one of the 2 main targets in most fields. The other one being blueberry maggot if present.

✓ **Blueberry Maggot (BBM):** Adults were first captured early last week in Burlington County. Growers should start a regular program for BBM if on a calendar schedule. If trapping for BBM, then insecticides don't have to be applied until 10 days (5 days Canadian program) after the 1<sup>st</sup> trap capture, and then again 7-10 days later.

✓ **Oriental Beetle (OB):** OB adults are just starting to emerge. Adults will continue to emerge through most of July. Mating, egg laying and hatch will also continue through most of the month, and possibly into early August. Grubs need to be controlled early, before the 3<sup>rd</sup> instar stage. Make sure to apply Admire prior to the end of July in order to target early stage grubs. See last newsletter for more complete recommendations.

✓ **Leafrollers and Other Lep:** Few larvae are being found at this time with only 5% of samples being positive. No larval populations require treatment. Second generation redbanded leafroller adults are starting to emerge. These will mate and lay eggs over the next couple of weeks. Larvae should be present in late June through early July. Obliquebanded leafroller (OBLR) adults are also emerging. OBLR larvae should also appear during late June through early July.

✓ **Sharpnosed Leafhopper (SNLH):** Adults are now present on yellow sticky board traps, mostly in Burlington County so far. SNLH can transmit blueberry stunt disease as adults move from infected plants to non-infected plants. Insecticides such as Provento, Actara, Diazinon, Lannate and the pyrethroids will control SNLH when targeting other pests such as blueberry maggot.

✓ **Gypsy Moth:** Although numbers continue to decline, a few sites (8%) still show larval populations in fields. Since the larvae are quite large and feeding on berries and foliage, very few should be tolerated. Lannate (non-Canadian exports), Sevin, Guthion and Imidan should work well. As harvest becomes closer, be particularly aware of preharvest intervals.

SEE BLUEBERRY IPM ON PAGE 5

✓ **Cranberry Fruitworm (CBFW):** The first injury of the season was seen on 6/6 in Burlington and Atlantic Co. Thus far, only 2% of our fruit samples show damage from CBFW. All treatments should have already been applied.

✓ **Thrips:** Thrips are being seen only on rare occasions. Levels are very low, and do not merit any insecticide use.

✓ **Plum Curculio (PC):** Only 1 adult was seen this past week. While about 51% of all fruit samples showed some amount of PC injury, most damage was at very low levels, and all egg scars are old. Insecticides should no longer be targeted for this pest.

✓ **Cranberry Weevil:** Adults are being seen in many fields, mostly on field edges. A few sites show leaf feeding activity, and in a couple of cases, fruit feeding.

### Trap Counts

#### Tree Fruit Southern Counties

Week End	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
4/14	0				0		0			
4/21	21				0		0			
4/28	175	0			23		44	0	0	
5/5	101	0	1		56		49	0	0	
5/12	83	0	1		26		30	0	0	
5/19	78	5	6		25		16	8	84	
5/26	21	30	3		4		9	31	57	
6/2	14	25	3		3	25	2	34	80	
6/9	398	34	4		0	15	1	39	60	

#### Tree Fruit Northern Counties

Week End	STLM	TABM-A	CM	AM	DWB	OFM-P	TABM-P	LPTB	PTB
4/14	0					0			
4/21	23					0			
4/28	1120					0			
5/5	834	0	0			2.3	0		
5/12	729.0	0	0.2			38.6	0		
5/19	456.3	3.5	5.1		6.0	40.2	6.1	7.5	0.0
5/26	55.8	9.0	6.4		6.6	17.3	10.0	24.6	0.0
6/2	65.6	18.1	7.7		27.0	4.3	23.5	30.8	0.0
6/9	125.9	30	3.1		14.5	2.9	27.8	30.9	0.5

#### Blueberry

##### Atlantic County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
3/31			46			
4/7			50.5			
4/14			6.1			
4/21			30.9			
4/28			82.7			
5/5			48.9			
5/12	0.01		9.02			
5/19	0.48		4.54			
5/26	2.38		0.43			
6/2	1.89		0.09	12.09	0.00	0.00
6/9	0.57		22.68	25.78	0.09	0.00

##### Burlington County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
3/31			0			
4/7			13.7			
4/14			7.0			
4/21			8.1			
4/28			44.4			
5/5			43.0			
5/12	0.04		13.79			
5/19	0.18		3.75			
5/26	0.42		0.27			
6/2	0.98		0.00	12.20	0.00	0.00
6/9	0.84		0.08	27.00	5.27	0.06

**Types of fungicides available for disease control in vineyards. The purpose of this table is to highlight some control options and demonstrate the importance of diagnosis when making fungicide decisions.**

Pesticide	Downy Mildew	Powdery Mildew
Sovran	++	+++
Ziram	++	0
Abound	+++	+++
Captan	+++	0
Copper fungicides	+++	++
Gavel	+++	0
Mancozeb	+++	0
Phosphorous acid (Phostrol, Prophyte, Agriphos etc.)	+++	0
Pristine	+++	+++
Ridomil	+++	0
Bayleton	0	+++
Bicarbonate	0	++
Elite	0	+++
Nova	0	+++
Quintec	0	+++
Stylet Oil	0	++
Sulfur	0	+++

## Insurance Required for Farm Vehicles on Public Roads

New Jersey Law requires that all motor vehicles that travel upon public roads are required to be properly licensed and insured. General liability or farm liability insurance policies or a separate auto insurance policy must cover these farm vehicles. If anyone has questions on this or any other motor vehicle regulation, call Karen Kritz at the NJDA at 609-984-2506. □

## Calendar of Events

**June 26, 2007** - 5:15 p.m. Twilight Tree Fruit and Wine Grape Research Meeting, Tour and Picnic, Rutgers Agricultural Research and Extension Center, 121 Northville Road, Bridgeton, N.J. Program information and directions at <http://gloucester.rutgers.edu> . Preregistration required; No charge. Contact Alice Rogers at 856 307-6450 Ext 1 or [gloucester@aesop.rutgers.edu](mailto:gloucester@aesop.rutgers.edu).

**July 12, 2007** - Penn State University Fruit Research and Extension Center Grower Field Day, Penn State Fruit Research and Extension Center, 290 University Drive, Biglerville, Pennsylvania. Noon to 5:00 p.m. Cost is \$15.00 . Contact Dr. Greg Krawczyk at 717-677-6116. Registration required and forms available at: <http://frec.cas.psu.edu/>.

**July 26, 27, 28, 29, 2007** New Jersey Peach Festival, Gloucester County 4-H Fairgrounds, Rt. 77 (South), Mullica Hill, N.J. Grower reception on Friday evening July 27 at 7:00 p.m. Information available at: <http://gloucester.rce.rutgers.edu/fairfest/> or by contacting 856-307-6450.

New Jersey Agricultural  
Experiment Station  
Plant & Pest Advisory  
Rutgers School of Environmental  
and Biological Sciences  
ASB II, 57 US Hwy. 1  
New Brunswick, N.J. 08901

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## **PLANT & PEST ADVISORY**

### **FRUIT EDITION - CONTRIBUTORS**

#### **Rutgers Cooperative Extension (RCE) Specialists and Program Associate**

George Hamilton, Ph.D., Pest Management  
Norman Lalancette, Ph.D., Plant Pathology  
Bradley A. Majek, Ph.D., Weed Science  
Peter Oudemans, Ph.D., Small Fruit Plant Pathology  
Cesar Rodriguez-Saona, Ph.D., Cranberry/Blueberry Entomology  
Peter W. Shearer, Ph.D., Entomology  
Daniel Ward, Ph.D., Pomology  
Gail Lokaj, Program Associate in Pomology

#### **Rutgers NJAES**

Joseph Goffreda, Ph.D., Breeding

#### **RCE 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)  
Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)  
Warren County, William H. Tietjen (908-475-6505)  
Fruit IPM, Dean Polk (609-758-7311)  
Atanas Atanassov, Ph.D., Program Associate (908-788-1338)  
Gene Rizio, Program Associate (856-566-2900)  
David Schmitt, Program Associate (856-307-6450)

#### **Newsletter Production**

Jack Rabin, Associate Director for Farm Services, NJAES  
Cindy Rovins, Agricultural Communications Editor

**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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