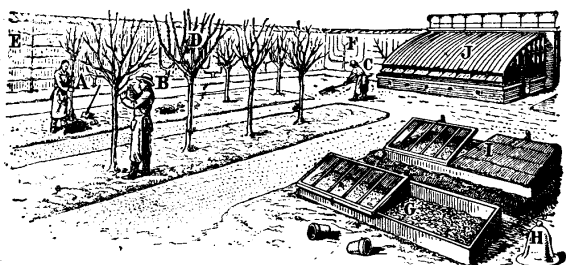


PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 19, 2007



INSIDE

Tree Fruit & Wine Grape Meeting, Tour and Picnic 1

Food Safety Series: Organisms and Carriers of Pathogens 3

Fruit IPM 4

Wine Grape Diseases 7

Whole Foods Market Low Interest Loan Program for Local Producers 7

Calendar of Events 7

Tree Fruit and Wine Grape Meeting, Tour, and Picnic: 5:15 PM, June 26

Bill Nicholson, Ph.D., Director, Rutgers Agricultural Research and Extension Center

Our Mission: Rutgers Agricultural Research and Extension Center (RAREC) has served the educational and research needs of commercial growers in New Jersey and the region since 1966. Today, applied research focuses on tree fruit, small fruit, vegetables, field crops and ornamental crops.

The Center's mission is to improve the production of profitable, high-quality food and ornamental crops that benefit New Jersey's economy and minimize environmental risks. Faculty specialists pursue this goal through research, demonstration and educational programs that encompass a multi-disciplinary approach to problem solving. The Center is also an IR-4 Northeast Regional Research Center, which houses the IR-4 state liaison. The national IR-4 program tests the safety and efficacy of crop-protection chemicals.

Extension Specialists at the Center communicate results directly to agricultural agents, growers and industry representatives through:

- Close interaction with Rutgers Cooperative Extension county offices.
- Weekly newsletters with current field information on diseases, insects, and other problems affecting New Jersey commodities, delivered directly to clientele.
- Participation in professional conferences, expositions, and agricultural fairs,
- Demonstration trials and field days conducted during the growing season.
- Educational sessions and tours of research plots.
- Extension workshops and presentations conducted on-farm at the Center.

Areas of Specialization are: Entomology, Horticulture, Plant Pathology, and Weed Science: We will tour part of the Center and look at a few key projects under the direction of these Specialists: Dr. Norman Lalancette, Dr. Brad Majek, Dr. Peter Shearer, and Dr. Dan Ward and the IR-4 Field Research Director, Melissa Bonham. The following are brief summaries of their programs:

Dr. Norman Lalancette, Specialist in Tree Fruit Pathology, conducts research on the epidemiology and control of tree fruit diseases. Current

SEE RAREC ON PAGE 2

RAREC FROM PAGE 1

research projects involve studies on brown rot, bacterial spot, rusty spot, and scab on peach and nectarine; and fire blight, sooty blotch, fly speck, and summer fruit rots on apple. Experiments focus on the effects of environment and control measures, such as fungicides, on pathogen biology. Results of applied research are transferred to growers through Dr. Lalancette's extension program.

Dr. Brad Majek's weed control research in fruit crops includes tree fruit, and small fruits. Tree Fruit research focuses on peaches and apples. Small fruit research includes grapes, blueberries, brambles, strawberries, and cranberries. Weeds compete with the crop for light, nutrients, water, and space. Additionally, weeds can host insect and disease pests, interfere with pollination, reduce spray coverage, and interfere with harvest. The evaluation of new herbicides is an important part of the program. Emphasis is placed on crop tolerance and effectiveness for the control of weeds that are currently difficult to control in the crop. Yellow nutsedge and herbaceous and woody perennial broad-leaf weeds receive the most attention. Orchard/vineyard floor management has been the focus of more in depth studies, where no-till, conventional tilling and a variety of mulches are used with and without herbicides to evaluate tree/vine growth.

Dr. Peter Shearer, Extension Specialist in Tree Fruit Entomology, conducts a comprehensive research and Extension program designed to find solutions for insects and mites that attack tree fruit. His experiments are conducted both at RAREC and several local commercial orchards. General research themes include: Determining efficacy of both registered and promising new insecticides in small and large plots, studying impact of various insecticides on natural enemies, development and implementation of mating disruption for key peach and apple pests, generating base-line sensitivity information of products against key pests for resistance management, and orchard floor management to reduce insect abundance and damage to peach fruit. This year's field-research at RAREC include trials against San Jose scale, plum curculio, thrips, oriental fruit moth, European red mite, stink bugs, and tufted apple bud moth. Dr. Shearer's on-farm research and demonstrations in grower orchards include investigating a "whole farm" mating disruption approach that simultaneously manages oriental fruit moth in adjacent apple and peach plantings.

The IR-4 Project's mission is to provide pest management solutions to growers of fruits, vegetables and other minor crops to benefit growers, processors, and consumers. At RAREC, Melissa Bonham, Field Research Director of the IR-4 Project, along with Field Researcher IV, Larry Rossell, conducts 35-40 magnitude-of-residue trials each year, with nearly half of those trials in small

fruit and tree fruit. Since 2000 nearly 80% of the IR-4 research efforts have been focused on biopesticides and reduced risk pesticides. Some of the Project's recent work at RAREC included the possibility of a shortened PHI for spinosad on peach, a label change for the use of acetamiprid on grape, and the use of an experimental fungicide for control of anthracnose on blueberry. This year's studies include establishing a new use pattern on an experimental insecticide on blueberry, the use of dinotefuron on peach, and various other studies in caneberry, cranberry, strawberries, and peaches. There have been many upgrades made to the IR-4 website, including a new biopesticides and organics database, a link to the list of probable future registrations, and a link for grower's to submit pesticide use requests to Headquarters for possible future studies. IR-4 research helps New Jersey's growers stay ahead of their global competition by providing safe and effective pest management solutions for the nearly \$650 million worth of minor use crops grown within the state. The IR-4 team based at RAREC is proud to support the mission of the IR-4 Project and is dedicated to serving area growers.

Dr. Dan Ward, Extension Specialist in Pomology, is the newest addition to the fruit team at RAREC. Dan's responsibilities include both tree fruit and small fruit. He is developing a program that emphasizes optimizing fruit quality both on the plant and in storage. Topics he is studying include: Identifying predictors of peach fruit storage life using nondestructive measurement techniques, testing of new winegrape cultivars for New Jersey, postharvest performance of eastern peaches, and interaction of weed management and horticultural practices during establishment of peaches and winegrapes.

To register for the picnic after the tour, contact Maria or Alice at (856) 307-6450, Extension 1, by Friday June 22. □

Food Safety Series: Organisms and Carriers of Pathogens

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

Water – Water can carry many organisms such as *Escherichia coli*, *Salmonella* spp., *Vibrio cholerae*, *Shigella* spp., *Cryptosporidium parvum*, *Giardia lamblia*, *Cyclospora cayetanensis*, *Toxoplasma gondii*, and Norwalk and hepatitis A viruses. Just a small amount of these organisms can cause a foodborne illness. Know your water source! Drinking water, such as municipal water, is considered the safest source, but a copy of the municipal water test should be obtained each year. Ground water is better than surface water which may be contaminated anytime during the year. Water is one of the first and last things to come in contact with produce. Make sure the source used is not contaminated from livestock operations, wildlife or sewage treatment facilities. Ground water sources should be sampled at least twice a year to determine if a microbial problem exists. Test surface water more frequently (spring, mid summer and just before harvest) to ensure product safety.

Manure and Municipal Biosolids – These two are potential sources of *Escherichia coli* 0157:H7, *Salmonella*, *Cryptosporidium* and other pathogens. Biosolids are not recommended for use on fruits and vegetables in New Jersey. Manure including slurries and teas must be managed to ensure produce does not become contaminated. Fresh manure should not be applied within 120 days of harvest; no closer than two weeks before planting or as a sidedress material. The manure should never come in contact with any horticultural crop. Manure is best applied to agronomic or perennial crops that will not be harvested until the end of summer. Slurry stored or composted manure will reduce or kill most pathogens if held for sufficient time. Slurry material should be held for at least 60 days in summer and 90 days in winter. Composted manure if heated to at least 140°F will control microbes. A good rule of thumb - if weed seeds are killed then microbes will be killed.

Worker Hygiene – There are several organisms that can be transmitted through food contaminated by infected employees. Among those are *Hepatitis A*, *Salmonella typhi*, *Shigella* species, Norwalk and Norwalk-like viruses, *Staphylococcus aureus*, *Streptococcus pyogenes* and *Escherichia coli* 0157:H7. Some past outbreaks of foodborne diseases have been traced to poor worker hygiene. The Occupational Safety and Health Act mandates that growers need to have restroom facilities in the field when working more

than ¼ mile from another restroom. The facility must have soap, fresh water and single use towels for hand washing. Having these facilities does not mean they are properly used. One of the biggest maintenance problems with the field restroom is keeping clean water. Some type of automatic shut off will alleviate wasting water. Workers should be trained as to the reason for and proper use of the facilities. Training may be on a one-to-one basis or as a group in the spring at one session as the season begins. Whether they work in the packingshed or field, it must be stressed to workers that good hygiene is imperative. The symptoms most associated with foodborne diseases are fever, diarrhea, vomiting and sometimes a sore throat with fever. Any worker who has these symptoms should not work directly or indirectly with fresh produce. Encourage workers to report the presence of any of these symptoms and assure them they will not be fired or sent home, but will be given other tasks.

Field, facility and transport sanitation – Clean and sanitize all equipment prior to harvest. This includes previously used bins and containers. Once sanitized, place the bins and containers in full sun so the ultraviolet rays can continue to kill pathogens. Make sure all animals are excluded from the packing area. This is a difficult task if the packingshed has large overhead doors, but at least keep the building closed at night so birds do not roost, and pets and rodents are excluded. The packingshed should be cleaned and sanitized at the end of each day. Sanitation is critical whether the produce is delivered to a roadside stand, processing plant, or loaded on a truck for shipment. Inspect the truck for cleanliness, odors, and obvious dirt or debris. What was on the truck in the previous load could cause cross contamination. Make sure the refrigeration unit is working properly and the field heat removed from the produce before loading. Units on trucks are designed to maintain temperatures; not to remove field heat. □

Fruit IPM

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

Peach

✓ **Bacterial Spot (BS):** Fruit and leaf injury from bacterial spot infections continue to appear in new locations in southern counties. The symptoms that are appearing now are from infections that occurred 2 or more weeks ago. The period in which large scale epidemics occur is passing. Since it takes about 3 weeks for infections to show up on the fruit, early varieties up to about Redhaven are just about out of the woods. However for mid to late season varieties, coppers should be kept in the mix and antibiotics should be applied any time severe weather occurs.

✓ **Oriental Fruit Moth (OFM):** Degree day spray timings are as follows for the second generation:

OFM Treatment Timings – 2 nd Generation, 2 Sprays/Generation		
County / Region	Standard Insecticides	Intrepid
Gloucester – Southern	1 st 6/16-19, 2 nd trt 6/27-29	1 st 6/14-16, 2 nd trt 6/25-27
Monmouth – Central	1 st 6/18-20, 2 nd trt 6/25-27	1 st 6/16-18, 2 nd trt 6/29-7/1
Hunterdon - Northern	1 st 6/24-25	1 st 6/21-24,

✓ **Tufted Apple Budmoth (TABM):** Timings for TABM control are in the following table, updated since last week. Larvae are 80% hatched in southern counties, and about 65% hatched in northern counties. Injury from first generation larvae is more likely to occur in blocks that have not been thinned. Treatments for TABM first brood should now be completed in southern and central counties.

TABM Timing				
County Area	Spray Type			
	Standard Insecticides - AM	Standard Insecticides - EM	Intrepid - EM	Bt-EM
Southern	4 th 6/15-16	2 nd 6/13-15	2 nd 6/13-15	2 nd 6/13-15
Central	4 th 6/17-18	2 nd 6/14-16	2 nd 6/14-16	2 nd 6/14-16
Northern	3 rd 6/15-17, 4 th 6/21-22	2 nd 6/18-20	2 nd 6/18-20	2 nd 6/18-20

✓ **Thrips:** Thrips populations are building in clover and other blooming groundcovers. Susceptible varieties like Easterngo, PF-5, and Sentry should be scheduled to receive a thrips treatment. Spintor @ 6-8 oz. is suggested for control at 2 weeks prior to harvest on peaches, and 1 to 2 weeks prior to harvest on nectarines (PHI: 14 days on peach and 1 day on nectarines). Spintor will also control TABM if applied at the above timings.

Apple

✓ **Codling Moth (CM):** Degree day based spray timings are now past throughout all areas of the state. However additional sprays may be required on individual farms. If trap counts exceed 5 moths per trap after 7 – 10 days since the last spray, then an additional application is justified. Timings for second brood applications are estimated below for planning purposes, and will be revised next week:

Codling Moth 2 nd Brood Timing		
County Area	Application and Insecticide Type	
	Standard Insecticides – Avaunt, Neonicotinoids, Carbamates, OP's, Pyrethroids	IGR's - Esteem, Intrepid, Rimon
Southern	About 1 st trt 7/8	About 1 st trt 7/4-7/6
Central	About 1 st trt 7/10	About 1 st trt 7/5-7/7
Northern	About 1 st 7/16	About 1 st 7/11-13

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

✓ **Aphids: Spirea and Apple (green) Aphids:** Populations continue to build, and are below or at treatment levels in many orchards statewide. Our treatment threshold is set at 50% of the terminals infested with healthy colonies. Predation by midges and lady beetles is occurring in many blocks. In most cases biological control is possible if 20% or more of the infested terminals have beneficial insects actively feeding. Midge larvae are small orange maggots and can be found feeding amidst aphid colonies. Terminals are beginning to stop growth and harden. This will also lower aphid populations.

✓ **Woolly Apple Aphid (WAA):** Woolly aphid colonies are now appearing in many apple blocks in southern counties. This secondary pest has become more of a problem in recent years. Woolly aphids will feed on pruning wounds; one-year-old wood; and suckers. They cause injury by secreting honeydew onto developing fruit. Sooty mold eventually grows on the honeydew making the fruit unmarketable. Beneficial insects will usually control WAA in orchards that are on “soft” insecticide programs. Treatable populations often develop in orchards relying on pyrethroids. Where control is needed, Thiodan 50W applied at 3#/ac will provide control if good coverage is achieved. Thiodan applied at this time may also suppress GAA. Diazinon 50W @ 3-4#/ac is also effective and is a good choice where scale control is also needed.

SEE IPM ON PAGE 5

✓ **European Red Mite (ERM):** Mites are present in a few apple blocks statewide. Most are below the treatment threshold of 5 mites/leaf for late June through mid-July. See the *New Jersey Tree Fruit Production Guide* for treatment suggestions.

✓ **Leafhoppers and Leafhoppers and Fire Blight:** Leafhoppers (both white apple - WALH, and potato leafhoppers - PLH) have been present in apple orchards for several weeks. Whereas we can normally tolerate up to 3 leafhoppers per leaf (combined species), we cannot tolerate PLH in young orchards or in orchards where fire blight is present.

Fire Blight Is present in both southern and northern orchards, but seems to have spread some in northern locations over the past 2 weeks. See previous newsletters and the *Tree Fruit Production Guide* for controls.

Applications made for aphid control should also control leafhoppers.

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
SJS Crawlers-first generation	June 02 +/- 08 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
TABM 1st gen. 475 DD target (end)	June 18 +/- 10 Days	June 16
CM 2nd generation 1250 DD target	July 15 +/- 10	Not yet observed

Blueberry

✓ **Aphids:** The aphid complex shows an increasing population over most fields, and is the primary insect target at this time. About 65% of samples have been positive, with 37% over the 10% infestation level.

✓ **Oriental Beetle:** Adult activity has picked up considerably over the past week. Adults will be mating and laying eggs over the next month. Grubs can kill young plants and stunt or cause older plants to decline. Admire is the **ONLY** labeled material that works, and should ideally be applied prior to late July. See previous newsletters for other details.

✓ **Blueberry Maggot:** Adults are being found at very low numbers on some commercial farm sites. Growers who are on a trapping and monitoring program, should not have to treat until flies are found in traps. While trap captures on commercial farms range from 0-1 fly pre trap, one non-sprayed site was found to have 30 flies per trap this past week.

✓ **Blueberry Tip Borer:** Recent sightings of shoot dieback (1st 3-6 " of new growth) reveal low levels of Tip Borer infestation. Although we are seeing this more frequently in Burlington Co. there are also low levels of injury in Atlantic Co at some sites. Since there is no pheromone to time adult activity, we are left with examining the mines for evidence of (or lack of) larvae. Most larvae have already exited the wood, but a few remain. This indicates that some adults are active.

✓ **Leafrollers and Other Leps:** About 12% of our samples have been positive for live worms. Average numbers have been very low, with only 2 fields requiring treatment. Populations of **Blueberry Leafminer** have increased over the past week. Leafminer larvae can be found inside of the shelters, which are commonly called tepees or tents. While this insect is seldom a pest, very high populations may get into the flats and packing line. **Redbanded Leafroller** adult counts have increased over the past week. This is the start of the second generation flight. Adults will mate and lay eggs, which will hatch and produce second brood larvae. Look for larvae on the growing tips and fruit clusters by the end of June and the first 2 weeks of July.

✓ **Gypsy Moth:** Only one site was seen with any activity. While the remaining larvae are large, they should be pupating soon and turning into adults. No further treatments will be needed for control this season.

✓ **Cranberry Fruitworm and Fruitworm Injury:** As expected we are seeing more frequent injury since last week. About 12% of samples are positive for damage, but only 3% have exceeded 1% fruit injury level at this time.

✓ **Plum Curculio:** Once again this week we have only seen 1 adult among all of our sites. The number and condition of PC scars also suggests that PC has not been recently active. About 60% of samples show low levels of scars and only 0.7% have been at levels above 1% injury. No fresh scars have been seen.

✓ **Thrips:** Thrips are a non-issue. We are seeing only occasional low levels mostly on foliage.

✓ **Cranberry Weevil:** The number of adults seen has declined since last report. There have not been any recent observations of weevil foliage or fruit feeding.

✓ **Mummy Berry:** Only very low levels are present this season. Infected fruit was seen recently at 2 commercial farms at very low levels.

SEE TRAP COUNTS ON PAGE 6

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	
6/16	1062	27	3		1	25	5	34	68	

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
6/16	711.9	25.0	1.9		2.5	1.6	28.0	16.9	0.6

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
6/16	0.73		63.34	18.54	0.24	48.05

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
6/16	1.42		7.92	26.86	6.91	54.00

Wine Grape Diseases

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

What do chlorosis, stunting, wilting, sudden or slow decline, and general malaise all have in common? These symptoms all point to soil and root related problems. Symptom expression is most dramatic during times of heat stress because damaged root systems cannot support the higher demand for water. It is typical that the entire plant will appear stressed and may even begin to defoliate. The problem may be caused by root infecting fungi, nematodes as well as soil borne insects such as root grubs. Unfortunately, most root diseases are extremely difficult to control once introduced to a vineyard but it is essential that the problem be properly diagnosed to develop the best possible management strategy. Many root problems will go unnoticed because the symptoms are not severe or may appear as a nutrient deficiency. These chronic diseases can reduce yields significantly and will ultimately reduce the productive life of a vineyard. If you suspect a root problem consult your grape specialist or agent to obtain the appropriate diagnosis. □

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.

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 Krawczyck 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.

Whole Foods Market Announces Low-Interest Loan Program for Local Food Producers

Whole Foods Market, the leading organic and natural foods supermarket, is seeking local farmers and other food producers who are interested in participating in its new Local Producer Loan Program. As part of a company-wide initiative supporting local agricultural producers and food artisans, the company plans to provide up to \$10 million annually in low-interest loans to small producers in the U.S.

At five to nine percent, the interest rates currently offered through Whole Foods Market's pilot program to small agricultural producers can be extremely attractive. The program has other attributes geared to small producers: loan application paperwork is minimized; there are no penalties for early repayment; and loan terms may be from a few months to ten years.

The Local Producer Loan Program is part of Whole Foods Market's renewed commitment to local agriculture. This includes hosting farmers markets at stand-alone stores, refocusing in-store marketing to highlight locally-produced products, and hiring regional staff focused specifically on sourcing local products.

"It is Whole Foods Market's intention to help finance local food production all over the United States," said John Mackey, co-founder and CEO of Whole Foods Market. "We are going to 'walk our talk' with financial support for local, small-scale agriculture. We believe this financial assistance of up to \$10 million per year can make a very significant difference in helping local food production grow and flourish across the United States."

Producers throughout the U.S. are invited to participate in the program. Those interested can find more information and a loan application at the website: <http://www.wholefoodsmarket.com/products/localygrown/lplp/index.html>. They can also contact the program coordinators at lplp@wholefoods.com.

Submitted by Rick VanVranken, Atlantic County Agricultural Agent. □

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

New Jersey Agricultural
Experiment Station

RUTGERS

FIRST CLASS
POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

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.

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.

For back issues, visit our web site at:
www.rce.rutgers.edu/pubs/plantandpestadvisory

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

Cooperating Agencies: Rutgers, The State University of New Jersey; U.S. Department of Agriculture; and County Boards of Chosen Freeholders. The U.S. Department of Agriculture (USDA) prohibits discrimination in all programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Rutgers Cooperative Research & Extension is an Equal Opportunity Program Provider and Employer.