

# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

SEPTEMBER 12, 2006

## Apple Maturity Update for North-Central New Jersey

*Win Cowgill, County Agricultural Agent, and Martha Maletta, Research Associate, RCE of Hunterdon County*



NY428

Apple maturity has advanced rapidly with the several days of mid 80's temperatures this week. Growers must watch for drop and advanced maturity. Mike Fargion, Cornell, sent out an alert to the Hudson Valley Growers this weekend as follows "APPLE MATURITY IS MORE ADVANCED THAN WE PREDICTED. BE PREPARED FOR OPTIMAL HARVEST WINDOWS TO OPEN EARLIER IN THE SEASON."

On Sunday 9/10 I collected apple samples in Hunterdon, Warren and Morris Counties and observed the same trends. Fruit maturity is moving along! Cortland, RedCort, Empire, McCouns and Red Delicious are all ahead of schedule.

The cool nights however combined with the warm sunny days have made for great apple growing conditions resulting in high red color on all varieties. Note that some blocks of stressed trees have fruit that is very loose even if retained. Stop drop sprays do not work as well on trees that are stressed. Some varieties are maturing sooner than others due to this stress. Honeycrisp matured ahead of Gala and McIntosh this year as an example. Jonagold is maturing on the early side as well.

### What the numbers mean

Several growers have asked for a bit of information on what the numbers mean in our brix and starch iodine tests. The SI (starch) is a measure of how much starch has converted to sugar. The lower the number the more "immature" the fruit is. The higher the number the more "mature" the fruit is. We like to have an SI of between 5-6 to harvest for retail sales. Brix is a measure of sugar content of fruit. A brix of at least 12 percent should be present for acceptable eating quality. Pressure is also an excellent indicator of maturity and the "crunch factor". For most varieties I would like to see a pressure of at least 16 lbs at harvest. The exception is Honeycrisp. It has excellent crunch at 13-14 lbs pressure. Studies have shown that it has double the number of cells that give it its unique crunchy texture.

### North Jersey Apple Maturity Results

**HoneyCrisp** - Honeycrisp has been completed for the most part in North Jersey with excellent red color. Growers in the Hudson Valley, NY and Massachusetts are on their fourth picking.

SEE APPLE MATURITY ON PAGE 2

## INSIDE

Apple Maturity Update for North-Central New Jersey ..... 1

Wine Grape Info for the Region ... 2

Replacements for Cresthaven .. 4

Spray Cherries for Bacterial Canker ..... 5

Successful Businesses Pay Close Attention to Fine Details ..... 6

Tree Fruit Variety Showcase and Hort Research Twilight Meeting ..... 6

# Wine Grape Information for the Region

Mark Chien, Wine Grape Agent,  
Penn State Cooperative Extension

Source: Mark Chien's electronic newsletter on September 5, 2006.

**Note:** I need to make some comments about the last e-newsletter I sent out. In the disease portion I alluded to my experience with battling botrytis with late season fungicide applications. Wayne Wilcox told me that his research has shown that applications of botryticides at veraison and veraison + 2wks have demonstrated good results. I would agree with that. I was referring to attempts to control existing rot infections deeper into the post-veraison season, after the veraison+2wk application. At this point the weather may have the most to say about how quickly the rot spreads. Also, I incorrectly used the term "bees" when I was referring to yellow jackets and hornets. All growers should be aware of how their spray programs and other activities impact honey bee populations. Yellow jackets are the main pests around the vineyard and winery at this time of year.

## Wine Maker Technical Workshop Report

Lisa van de Water is truly a font of knowledge and experience. She sees dozens of cellars each year and knows all the dirty little microbial secrets in all of them. She gave a very practical and interesting four-hour presentation about harvest recommendations from the vineyard through fermentation. I cannot imagine that any wine maker in Pennsylvania would not have benefited from hearing this information. From the viticulture perspective I learned about the various cellar microbes that reside in the vineyard also. For example, in all of her experience she has never known *brettanomyces* to enter a cellar via the vineyard. Other organisms that hang around on the grape bloom and can cause trouble in the cellar include wild yeast

SEE WINE GRAPES ON PAGE 3

## APPLE MATURITY FROM PAGE 1

**Gala-** Early strains are done in North Jersey and only later maturing strains that have been Retained remain.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Buckeye	Snyder Farm	9/12	1/2 Rate	21	11	4.3

**McIntosh** - Macintosh harvest is winding down in Central Jersey and well under way Northern New Jersey, New York and all of New England. We will complete the last picking of Rogers Red McIntosh at Snyder farm on the 12<sup>th</sup>.

**Early Fuji Types-** These Fujis are running a full week ahead of last year. There are four to five new strains of early fuji types; all are getting close to maturity. I have four under extensive testing (30-50 trees each) at the Rutgers Snyder Farm. These include BeniShoegun Fuji, September Wonder Fuji, Auvil Early Fuji, and Earli Red Fuji. These are very interesting in looking at the early PYO market with a Fuji type. They need to be picked several times by background color and maturity. These are true Fuji's as contrasted to the older Yataka Fuji, which is not a true Fuji.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
September-Wonder	Snyder	9/11	no	15.8	12.6	6.5

**Jonagold-** is moving ahead and will be ready this week in Hunterdon County

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
JonaGoRed	Snyder	9/11	yes	19	14	4.8

Warren	Location	Date	Retain	Pressure	Brix	Starch
Jonagold	Blairstown	9/11	no	17.4	12.5	5

**Macoun-** Macouns are highly colored and have good sugar but in the samples taken have not developed their unique flavor that Macoun is known for.

Hunterdon-	Location	Date	Retain	Pressure	Brix	Starch
Macoun	Calfont	9/11	Yes	19	10.2	2.5

Warren	Location	Date	Retain	Pressure	Brix	Starch
Macoun	Snyder	9/11	yes	21	10.8	3

Warren	Location	Date	Retain	Pressure	Brix	Starch
Macoun	Blairstown	9/11	no	17	11.5	3.5

Warren	Location	Date	Retain	Pressure	Brix	Starch
Macoun	Hackettstown	9/11	yes	16	12	5.4

**Cortland** is an apple that has increased in popularity with newer strains being highly colored. This year Cortland is early and is ready for picking at Snyder/Hunterdon. Cortland is usually picked one week after Macs (remember Macs can be picked over 3 weeks if stop drop is used). Normally around mid September at the Rutgers Snyder farm. They do not starch test well but SI testing can be used as guideline. For Cortland target a starch of 5-6.

Hunterdon-	Location	Date	Retain	Pressure	Brix	Starch
RedCort	Snyder	9/11	yes	18	13.4	3.6

Warren	Location	Date	Retain	Pressure	Brix	Starch
Cortland	Hackettstown	9/11	yes	16	11	2.8

**Jonathan** is an old-time favorite apple popular in the Midwest. It has colored nicely.

Warren	Location	Date	Retain	Pressure	Brix	Starch
Jonathan	Hackettstown	9/11	no	17	11.6	4.2

**Empire:** is running way ahead of schedule but was not ready for retail sale type harvest in any sample tested. We would look for starch of 5-6, brix of 13-14%, pressure 16 lbs.

SEE EMPIRE ON PAGE 3

EMPIRE FROM PAGE 2

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Empire	Snyder	9/11	no	15	12.2	3.8
Empire	Calfont	9/11	yes	19	10.2	2.5
Warren	Location	Date	Retain	Pressure	Brix	Starch
Empire	Blairstown	9/11	no	18.5	11.5	3.6
Empire	Hackettstown	9/11	yes	18.8	10.4	2.2
Morris	Location	Date	Retain	Pressure	Brix	Starch
Empire	Chester	9/11	yes	19	12.1	3.5

**New York 428-** is not quite ready yet, see the comments below from our friend:

Hunterdon-	Location	Date	Retain	Pressure	Brix	Starch
NY428	Snyder	9/11	No	22	11	2.3

Dr. George Green comments "I have been impressed with NY 428. See the photo on page 1. Biglerville, PA is not the best coloring area. It is only about 100 miles north of DC and summers are hot and falls can be very warm with hot muggy spells. Under these conditions there is often not much of a diurnal change in temperature that seems to be so helpful in coloring apples. McIntosh never color well and many drop with little color.

NY 428 is a sister to Fortune. Fortune in Biglerville is too large, is fairly soft and does not color well. On the other hand, NY 428 is fairly firm, has nice size, colors well, has yellowish flesh, a good sugar/acid ratio and has a pleasing flavor. I was impressed with NY 428 and I think that it would be a successful cultivar. I doubt that any cultivar will become as dominate as Delicious has been. I think that NY 428 may be a niche variety that could succeed in areas where McIntosh cannot be successfully grown."

**Red Delicious-** Was not ready for retail sale type harvest in any sample tested and is 10-14 days off.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Oregon Spur	Snyder	9/12	no	17.6	11.5	3.4
Warren	Location	Date	Retain	Pressure	Brix	Starch
Red Chief	Hackettstown	9/11	yes	18.5	9.4	2.3

**Retain®:** Reminder Retain® should be applied 28 days before anticipated harvest and with a 21 day Pre Harvest Interval (PHI). If blocks were not treated with Retain®, it is too late this season to apply except for October maturing apples such as Sun crisp, Fuji, Stayman, Braeburn. It is too late for Empire and Red Delicious in New Jersey.

**Note:** Retain will not work well if applied to drought stressed trees!

**Note:** This report takes approximately two days to prepare in collecting and testing samples and in preparation of the text and data. A note of thanks to all who make this report possible beginning with all the growers who participate, M. Compton who assists in obtaining fruit samples and Cathy Kloetzili research assistant at the Rutgers Snyder Farm. Most importantly thank you to the growers for allowing me to sample their blocks. □

WINE GRAPES FROM PAGE 2

strains (good guys and bad guys-very few Saccharomyces), fungi (the usual suspects) and bacteria (including lactic acid strains).

Her top ten recommendations for clean and complete fermentations are:

- Get the best grapes you can
- Test (and adjust) TA and pH
- Be kind to your yeasts
- Feed your yeasts
- Watch out for problems before fermentation
- Monitor your fermentations carefully
- If a fermentation sticks, see a "doctor"
- Avoid contamination of new wines with old microbes
- Test after fermentation
- Inoculate for MLF

Lisa is from Virginia and comes East often so she knows our issues. She is adamant about a few things. You cannot make good wine out of rotten grapes so keep them clean and if they aren't clean get rid of the bad stuff by sorting religiously if not secularly. Our red wines often have problems with color, tannin and complexity. Are we doing everything we can to bring out the best qualities in the fruit we have? Are we doing too much in some cases... being too manipulative? Lisa can provide practical insights into many of these questions and issues. You should engage her services if you think it will help you to make better wines. She will return this winter to talk about "cellaring and bottling", two pretty important wine making practices.

**USDA Viticulture Consortium**

**Research 2005 Final Project Reports**

The final reports for 2005 viticulture research projects funded by VC-East and can be found at <http://www.nysaes.cornell.edu/pubs/vitcon/>. I also have a few CDs available, contact me if you want one. This is very interesting information that represents the leading edge of viticulture in our region. May I suggest that you check out the list of projects and read those that interest you. I think you will be amazed at the breadth and quality of the viticulture research that is going on in our region. I hope reading these reports will encourage you to conduct your own on-site experiments and to engage and support scientists and programs that provide research assets to our industry. Submitted by Jerome L. Frecon, Agricultural Agent. □

# Replacements for Cresthaven

*Jerome L. Frecon, Agricultural Agent*

Cresthaven was once one of the most prominent peach varieties in its season, ripening from August 20 to 26. It has lost favor and in fact many blocks do not look like the original Cresthaven. Flaming Fury PF 25 is an attractive, crimson red skin yellow-fleshed peach ripening pretty much on Cresthaven. FFPF 25 may not be quite as large as the original Cresthaven but it is superior in most other characteristics. Dan Ward and I recently saw attractive large Flamin Fury PF 25 when we visited Paul Friday's Farm (see picture) in Coloma, Michigan. PF 27A is not quite as dark red as FFPF 25 but is superior to Cresthaven. FFPF 27A was beautiful in 2006 with large attractive fruit and excellent flavor. FFPF 27A also had great size in 2006 and hung on the tree well when other peaches were dropping. It seems to ripen more uniformly than Cresthaven and starts ripening a few days after the first pickings of FFPF 25 and Cresthaven.

Flamin Fury PF Lucky 24 B, again, has been very firm and attractive. The size was exceptional and it hangs on the tree very well. This peach ripens on the front end of Cresthaven and is definitely a worthy replacement. Flamin Fury PF 28-007 produced a full crop for the first time on young trees. This variety may be better than all of the three Flamin Fury selections I have mentioned. It has more red overcolor and may be firmer. The fruit was also very large on young trees. I also had good crops on Flamin Fury PF 30-007 and 35-007 and PF 24C hardy. All were very nice although 24C hardy may be slightly earlier than Cresthaven. All these varieties are susceptible to bacterial spot as proven by the severe pressure we had in 2006.

Jerseyglo and Jerseyqueen are both varieties that overlap with Cresthaven. Jerseyqueen is still heavily planted because the tree is strong; fruit are very large and attractive. I guess with global warming and other management practices we will be able to grow Jerseyqueen on most sites. The packout and size are hard to beat. Fayette is the back end of Cresthaven but is not a consistent cropper and is susceptible to bacterial spot (so is Jerseyqueen). I saw some beautiful Fayette being harvested in Michigan.

NJ K 40-34, now named NJ 351, and NJD101-162 now named NJ 352 were developed at the New Jersey Agricultural Experiment Station. Both have been tested at the Rutgers Agricultural Research and Extension Center and in grower blocks in southern New Jersey. I also, saw NJ 351 when I was in Michigan last week and it looks just like it does in New Jersey. Both cultivars significantly overlap Cresthaven and are very firm and attractive. NJ 352 has more crimson red overcolor. NJ 351 overcolor is more of a scarlet red with a bright orange yellow undercolor. Both are very firm. NJ 351 is almost

stony hard with a low acid honey type sweet flavor. NJ 352 has excellent melting flesh, more traditional in peach flavor. My first picking of both was on August 17 for NJ 351 and August 20 for NJ 352, and the last picking of NJ 351 was on August 31. The fruit was just as firm on the last as the first date. Fruit size was large to very large. No bacterial spot was observed.

Redskin and Jerseystar ripen on the back end of Cresthaven. Buddie's Pride a local variety from Hammonton also ripens in Cresthaven season.



*Flamin Fury PF 25*



*Flamin Fury PF 28-007*



*Gloria (NJK 40-34)*

# Spray Cherries for Bacterial Canker

Win Cowgill, Agricultural Agent

**B**acterial Canker is a serious bacterial disease of cherry in New Jersey, and all other regions where the climate is humid. Bacterial canker has been very active this season in New Jersey in both sweet and tart cherry blocks.

**Bacterial canker** or bacterial gummosis of sweet cherry is caused by several *Pseudomonas* bacterium. This disease infects flower buds and spurs. It can completely kill new spurs and leaves and then move into the trunk on cherry. This is especially problematic with our new Geslia Dwarf cherries as losing a scaffold or getting infection into the trunk will limit production as the tree rapidly declines.



## Control Now

Begin spraying now to control Bacterial Canker. Cankers get started mainly in the fall after most of the leaves have fallen and the trees are beginning to go dormant. The only effective way to control this disease is to reduce the number of bacteria before the trees enter their susceptible period, avoid large, dormant pruning cuts, and use summer pruning to minimize the impact of the disease. The bacteria that start these cankers are found on the surfaces of mature leaves and other green tissues, and *do not* come from existing cankers.

The only successful control we have found is repeated applications of the old Bordeaux mixture in September, October, and November and repeated again in the spring. Bordeaux Mix consists of hydrated lime and Copper Sulphate. The rates and methods of mixing are important. We began our sprays the first week in September. Note, however that sprays of Bordeaux applied to green leaves must be *saftened* with vegetable oil (canola) to avoid burning the foliage. *The rate is three quarts of canola oil per 100 gallons.* The four additional sprays 14 days apart will be applied. Bordeaux mix will also be applied in the spring with several applications before bud break.

It would be my recommendation that in all cherry blocks a program of Bordeaux Mix applications should be made this September. Careful observation and scouting of older blocks should be done now to determine if this bacterial disease is present and control warranted. It is my observation to date that if any

Bacterial Canker is observed in sweet cherry I would plan a spray program of Bordeaux mixture.

## Other Coppers

In a research trial at the Rutgers Snyder Farm, Champ DP copper was also evaluated against Bordeaux mix for phytotoxicity on cherry. The oil equally saftened Champ DP as it did Bordeaux. Caution, Champ2 Flowable may not be compatible with the vegetable oil.

For additional information please do not hesitate to contact me at 908-788-1339 or cowgill@aesop.rutgers.edu.

**Note:** In our humid climate in New Jersey the cankers can continue to develop in lateral branches and the central leader. In some cases the cankers have grown to girdle and kill two-year wood. I have observed central leader dieback as a result. In older wood the canker looks very much like a fire blight canker in apple. In most cases the canker begins to ooze a brown to amber exudate. It appears that under our humid conditions this disease is very hard to control and can be devastating if control measures and the proper horticultural practices are not followed. Many growers who did not think they had bacterial canker are beginning to see it on three and four year old trees.

The source of inoculum may come from wild cherry trees in our hedgerows, Black Cherry, *Prunus serotina* may be one source of inoculum for the *Pseudomonas* during wind and rainstorms in the spring and summer months. Removal may be beneficial.

## Fact sheets on Bacterial Canker

Overall, the best information on this disease is from a fact sheet from Ontario Canada written by W.R. Allen "Bacterial Canker of Sweet Cherry" NO. 88-0886.

You can find it online at <http://www.gov.on.ca/OMAFRA/english/crops/facts/88-086.htm>. It has good color plates and lists control measures, however, it appears that under our humid conditions this disease is very hard to control and can be devastating. This bacterial disease is most troublesome in young plantings where it can cause losses of up to ten percent of the trees. On mature trees it can reduce yields from 10–50%.

There are numerous fact sheets online for Bacterial Canker; many include color photographs for reference. Below are the listings for several: Ontario Canada written by W.R. Allen "Bacterial Canker of Sweet Cherry" NO. 88-0886.

<http://www.gov.on.ca/OMAFRA/english/crops/facts/88-086.htm>

West Virginia University  
[http://www.caf.wvu.edu/kearneysville/disease\\_descriptions/bactcank.html](http://www.caf.wvu.edu/kearneysville/disease_descriptions/bactcank.html)

Comparison of healthy trees vs. diseased trees:  
[http://www.caf.wvu.edu/kearneysville/disease\\_descriptions/disease\\_images/fig129c.jpg](http://www.caf.wvu.edu/kearneysville/disease_descriptions/disease_images/fig129c.jpg)

University of California  
<http://www.ipm.ucdavis.edu/PMG/r105101511.html>

## Successful Businesses Pay Close Attention to Fine Details

*Jhilson Ortiz, Mercer County  
Agricultural Agent*

As holiday season approaches, retailers and businesses all over the U.S. look forward to seasonal sales numbers. Attention to detail, the successful ones say, is key to lure and keep consumers.

On a recent visit to a local farmer's market, this principle was clearly present, from the smiling clerk to the product-knowledgeable staff that sold fruits, vegetables and flowers by the dozens.

High sales numbers are a result of careful planning and pragmatic sales vision. A local florist takes the time to explain to its crew every single detail of the flowers they sell, from the reasons a person should buy it to how to expand the shelf life of the bouquet. Regular and new consumers alike, agreed that purchasing flowers from this venue became a tradition due to this "customer extra care program".

Five stands down the aisle, an ethnic products store was planning a product demonstration to highlight the use of their products, from Tabasco sauce to Flan. The goal of the store's owner is to increase sales by introducing new flavors to the diet of trendy consumers. I envision success for him. He has the foot traffic and the key products. The only thing he needs now is a good taste demo, accompanied by the right info at the right time.

Direct marketing is a good sales window, but becomes a world of opportunities when attention to detail and careful planning are mixed within the business plan.

Contact your extension office to learn more about the topic or to request specific advice tailored to the products you sell. □

## Tree Fruit Variety Showcase and Horticulture Research Twilight Meeting

September 19, 2006  
5:00-8:30 pm rain or shine

*Sponsored by Rutgers Cooperative Research & Extension in cooperation with the Northeast Organic Farming Association of NJ*

### Participate in informal tours and discussions of the following research projects led by:

Winfred P. Cowgill Jr., Hunterdon County Agricultural Agent, , Peter Nitzsche, Morris County Agricultural Agent, Raymond Samulis, Burlington County Agricultural Agent, , William Tietjen, Warren County Agricultural Agent, Dr. Jim Simon, Professor, Cook College, Rutgers, Dr. Mel Henninger, Vegetable Specialist, RCRE, and Kris Smolenski, RCE of Salem County

**Location:** Rutgers Snyder Research and Extension Farm, Pittstown, NJ

**Time:** *Fruit Variety Show Case 5:00-6:00 PM*

*Field Tour 6:00- 7:00 PM*

*Inside Program 7:00 -8:30 PM*

### Specialty Crops

**Herbs, Spices and Medicinal Plants-** Dr. Jim Simon, Professor, Cook College, Rutgers

### Fruit

#### **Apple and Peach cultivar showcase**

Over 60 peach selections and 20 apple selections. **Note-** these trays of fruit will be on display at 5pm prior to the meeting at 6: 00 PM

**Super Slender Spindle System Apple Trial** (2000 Trees/Acre) – Win Cowgill, RCE of Hunterdon County

**NC-140 Apple Rootstock Trial for Apple Replant Disease** -Win Cowgill

### Vegetable

**Tomato Specialty and Heirloom Observational Variety Trial-** Peter Nitzsche

**Fresh Market Specialty Pepper** - Bill Tietjen, RCE of Warren County

**Fall Cole Crop's Variety Trial** - Dr. Mel Henninger, RCE, Specialist in Vegetable Crops

### **Controlling European Corn Borer in Peppers with Companion**

**Plantings** - Dr. George Hamilton, RCE Specialist in Pest Management

### **Evaluating Sweet Corn Varieties for Northern New Jersey** -

Raymond Samulis, RCE of Burlington County

**Updating Your Crop Insurance Program-** Kris Smolenski, RCE of Salem County

PESTICIDE CREDITS WILL BE AVAILABLE

**Pre-Registration is required** by calling Pat at 908-788-1338 –RCE of Hunterdon County


**Registration** is \$5.00 per person payable at the meeting

**For more info contact:** Peter Nitzsche (973) 285 8307, Winfred Cowgill (908) 788 1339

**Note-** Coffee and light refreshments will be served inside following the tour, **no meal** will be served. □

FIRST CLASS  
POSTAGE PAID  
PERMIT #576  
MILLTOWN, NJ 08850

NJ AGRICULTURAL EXPERIMENT STATION  
**RUTGERS**  
COOPERATIVE RESEARCH & EXTENSION  
Plant & Pest Advisory  
Rutgers' Cook College  
18 College Farm Road  
New Brunswick, N.J. 08901-8551



## PLANT & PEST ADVISORY

### FRUIT EDITION - CONTRIBUTORS

#### **RCRE 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

#### **NJAES/Cook College**

Joseph Goffreda, Ph.D., Breeding

#### **RCRE 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

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

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

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