

# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

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## Apple Maturity and Red Delicious Release Date

*Jerry Frecon, Agricultural Agent*

Many factors have made the value of state-wide release dates for Red Delicious difficult to determine and probably unnecessary. This has been dictated by the many changes in the New Jersey apple industry.

With the introduction of the first triple red sports of Red Delicious like Starkrimson(Bisbe) and Redspur, the New Jersey Apple Industry Council, in cooperation with the New Jersey Agricultural Experiment Station, developed release dates for the harvesting of apples in September in various areas of the state. These dates were released to discourage apple growers from picking these Red Delicious cultivars too early based on their red color and not the maturity of the flesh.

Over the years, approximately 50 different triple or super Red Delicious cultivars have been developed, all with subtle differences in maturity, color, and other fruit characteristics. Growth regulating chemicals trademarked as Ethrel and ReTain have been made available to growers to enhance and delay maturity respectively. Improved instrumentation and quantitative techniques have been developed to assist growers in determining apple fruit maturity.

We have also seen many changes in the structure of the industry. The New Jersey Tree Fruit Survey has documented a decline in Red Delicious plantings and planting of many other varieties. Receipts of apples documented by the Market News Service have shown a steady flow of Red Delicious from CA storage and the south during our September harvest season. Few Red Delicious growers from southern New Jersey are packing for the wholesale market with more going through direct market channels at farm markets.

Red Delicious in Northern New Jersey are marketed at retail exclusively. There is no incentive to pick fruit prematurely with retail markets. Rather retail markets dictate that fruit must be of the highest eating quality.

We do want to emphasize the importance of delivering proper maturity. Growers can utilize many techniques to determine apple maturity including starch iodine, soluble solids (brix), flesh pressure and most important, taste testing. While background color is helpful in determining maturity, overall color may not be, in years with warm

SEE MATURITY ON PAGE 2

# Painless and Efficient Maturity Testing

*J. Clements, Research Technician, University of Vermont and Winfred P. Cowgill, Agricultural Agent*

Our observation has been that few growers use the Starch Index (SI) method of determining harvest maturity. Perhaps SI testing is perceived as time consuming and difficult to properly judge. However, we believe that SI testing is the best and easiest indicator of apple maturity that a grower can use to plan their harvest and storage regimes.

Why is it important to perform SI testing? First, as mentioned, the SI method is probably the best way to judge fruit maturity without expensive equipment. The SI technique, which measures the starch to sugar ratio, is correlated with ethylene evolution. Ethylene synthesis occurs as fruit ripens. Therefore, the SI index is an inexpensive way to assess the degree to which fruit has converted starch to sugar, and is indicative of the onset and progress of ethylene production.

Secondly, because SI is a reliable indicator of relative fruit maturity, SI testing can help you determine if harvested fruit should be placed in early CA, late CA, or regular cold storage. As a rule, fruit with SI readings of 3-4 are suitable for late CA, apples measuring 4-6 on the SI scale are best for early CA, and any fruit reading 6 or above should be placed in regular cold storage or marketed immediately. Reliability in using the SI method for determining apple maturity is predicated on good sampling techniques. Look at fruit that has sufficient size and color, that are approaching harvest readiness. Note: Apples going into late CA (available in April-June, etc.) should not average less than 15 lbs. firmness.

A quick and simple testing technique

Having tested tens of thousands of apples in numerous experimental protocols over the past few years, we can suggest a simple, quick and efficient method for evaluating orchard by orchard or block by block SI apple samples. Equipment consists of a one quart hand-operated spray bottle filled with SI solution, a pocket-knife, and a Starch Index chart. The most commonly used chart on the east coast is the generic starch chart developed by Cornell University. Specific starch charts have also been developed for Gala, Empire and Liberty. On the west coast they have also been developed for Fuji. Using the chart, begin sampling and testing the fruit two weeks before anticipated harvest to get a baseline on the maturity.

It is important to keep good records on your maturity determinations by cultivar and block. You will start to build a good database of harvest maturity information for your orchard.

The procedure is simple—pick a sample of apples that appear ready to harvest, based on size, color, days after full bloom, and taste. Spray the SI solution on longitudinally halved fruit, wait 1 to 1 1/2 minutes and make your readings based on the SI chart. The whole process is portable, quick, simple, and saves SI solution compared to dipping individual apple in a solution-filled pan.

No doubt you (hopefully!) have an orchard filled with apples waiting to be harvested. Three critical ingredients—fruit color, fruit size, and SI measurement—must be considered when deciding when to pick and how to store. Overlooking any one ingredient could spell the difference between profit or loss for our 1997 harvest.

For additional information on testing for fruit maturity or where to obtain a starch iodine chart contact Jerry Frecon, Win Cowgill or Bill Tietjen, county agriculture agents. □

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## MATURITY FROM PAGE 1

temperatures prior to harvest (delayed red color) or with highly colored strains that develop red color way in advance of flesh maturity.

One of the simplest methods of determining apple maturity is the starch iodine test. The following article by Jon Clements and Win Cowgill, "Painless and Efficient Maturity Testing", outlines this method. □

## Fruit Meeting Calendar

**September 11, 1997** - Variety Showcase and Open House, Rutgers Fruit Research and Extension Center, 283 Route 539, Cream Ridge, NJ  
Contact: Dr. Joseph Goffreda (609) 758-7311, Ext. 10.

**January 20 - 22, 1998** - 1998 New Jersey Vegetable Growers Annual Meeting, Atlantic City, NJ

**January 28 - 30, 1998** - Tri-State Horticultural Meeting, Hershey, PA

# FDA Announces Strategy on Labeling Apple and Other Fruit Juices

*Jerome L. Frecon, Agricultural Agent*

In a recent press release the FDA announced measures to reduce the risk of illness from disease-causing microbes in unpasteurized fruit and vegetable juices. These strategies include food safety control programs for the industry, new labeling for products, and education programs for consumers and manufacturers. According to the FDA these measures will only affect the 2 percent of the food processors that sell unpasteurized fruit and vegetable juices.

The FDA will propose later this year a new rule requiring Hazard Analysis and Critical Control Point (HACCP) safety programs in all appropriate juice plants. The agency is considering proposing another rule requiring a statement of risk on all labels of fresh apple juice products until the HACCP plans are implemented.

The labeling being considered by FDA for untreated products would state that those products may contain pathogens known to cause serious or life threatening illnesses, that the juice has not been processed to destroy such pathogens, and that the risk of serious illness is greatest for children, the elderly, and people with weakened immune systems. Samples of these labels are available from my office, or the U.S. Apple Association, 6707 Old Dominion Drive, Suite 320, McLean, Virginia 22101-4556, telephone (800) 781-4443.

Concerning the FDA's HACCP proposal, some or all plants that manufacture juice products would be required to adopt their own HACCP programs. The HACCP plans are complex. Once the HACCP proposal becomes final and juice processors have adopted individual HACCP plans, any labeling requirement may be rescinded.

The FDA said they will also start public education programs on understanding and reducing the risk of pathogens in fresh juice products.

This Notice of Intent is not a law. Notifications and/or labeling in this respect is still voluntary.

The Notice of Intent announcing these public health measures has been on display since August 26, 1997 and was published in the federal register on August 28, 1997. Comments received before September 10, 1997 will be considered by the FDA as they develop future HACCP and labeling proposals. These comments should be made to the FDA's Dockets Management Branch, HFA-305, Food and Drug Administration, 12410 Parklawn Drive, Room 1-23, Rockville, Md. 20857.

The full text of the FDA announcement, "FDA Announces a Strategy to Increase Safety of Fresh Juices", is on the Virtual Orchard at <http://orchard.uvm.edu/ciderintent.html>. □

## Apple Processors

*Jerome L. Frecon, Agricultural Agent*

With the loss of markets for processing apples, growers may be interested in contacting one of the following apple processors. Most of those on this list come from the North Carolina Cooperative Extension [Apple Production Newsletter](#), Volume 3, No. 8, August 1997.

The additional apple processors may be available. There is no discrimination intended and no endorsement implied by exclusion or inclusion on this list.

Atwater Foods, Inc  
Contact: Randy Atwater  
10190 Rt. 18  
Lyndonville, NY 14098  
Phone: (716) 765-2639  
Fax:(716) 765-9443

Beech-Nut Nutrition Corp.  
Contact: David Hale  
102 Church St.  
Canajoharie, NY 18817  
Phone: (518) 673-3251

Cahoon Farms  
Contact: Bill Cahoon  
Lummisville Rd.  
Wolcott, NY 14590  
Phone: (315) 594-808  
Fax:(315) 594-6400

Cliffstar Corporation  
Contact: James Gloss  
1 Cliffstar Ave.  
Dunkirk, NY 14048  
Phone: (716) 366-6100

Knouse Foods Coop., Inc.  
Contact: George Musselman  
800 Peach Glen-Idaville Rd.  
Peach Glen, PA 17306  
Phone: (717)677-8181  
Fax (717) 677-7069

Seneca Foods Corporation  
Contact: Don Clark  
P.O. Box 1009  
Mountain Home, N.C. 28758  
Phone:(704) 693-0711, ext.233

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National Fruit Co.  
Contact: Eric Melkerson  
Winchester, VA  
Phone: (540) 662-3401

Kraft Foods Bakeries, Inc  
Hudson Processing  
Contact: Carmen Nero  
Star Route Box 70  
Hudson, NY 12534  
Phone: (518) 851-9314  
Fax (518) 851-9322

Mayer Brothers Apple Products, Inc.  
Contact: James Dickinson  
7389 Lake Road  
Barker, NY 14012  
Phone: (716) 795-9930  
Fax:(716) 795-3018

M.H. Ziegler & Son, Inc  
Contact: Gary Turner & Ken Nace  
1513 North Broad St.  
Lansdale, PA 19446  
Phone: (215)855-5161  
Fax: (215)855-4548

Niagara Foods  
Contact: Barry Schneider  
P.O. Box 177  
Middleport, NY 14105  
Phone: (716) 735-7722

NorthEastern Juice Cooperative, Inc.  
Contact: Doug Ricketts, Gen. Mgr.  
P.O. Box 144  
Livonia Center, NY 14488  
Phone: (716)346-0514  
Fax: (716)346-0492

Duffy Mott  
Contact: Kelly Robinson  
45 North Aspers Road  
Aspers, PA 17304

Gerber  
Contact: Keith Gunter  
P.O. Box 950  
Skyland, N.C. 28776  
Phone: 1-800-233-4355

*The Annual*

# "Cream Ridge Breeding/ Variety Showcase and Twilight Fruit Meeting

September 11, 1997

## PROGRAM

Registration/Commercial Exhibits Open at 3:30 p.m.

### **Pesticide Recertification:**

Tour - 1A=4, PPII=4, CAT10=4

Twilight Meeting - Core=1, 1A=3, PPII=3, CAT10=3

### **Small and Tree Fruit Research Tour and Variety Showcase (4:00)**

Joseph Fiola - Small Fruit Breeding and Cultural Research  
Norm Lalancette - Nectarine Scab & Brown Rot Control with Abound™  
Russell Blair - Chemical Thinning of Peaches  
Robert Belding - PGR's in Stone Fruit  
Peter Shearer - Apple Insecticide Efficacy Evaluation  
Dean Polk - IPM Research  
Joseph Goffreda- Showcase - NJAES Tree Fruit Breeding Program  
Jerry Frecon - Showcase - Varieties from South Jersey  
Win Cowgill - Showcase - Varieties from North Jersey

**Dinner (6:00):** - Sausage & Peppers, Cheese Steaks, Salads, Dessert,  
and Refreshments (Chef Samulis and crew)

### **Administrative Welcome**

### **Twilight Fruit Meeting (6:45)**

Ron Good - Jersey Fresh Update  
Robert Balaam - Pesticide Regulatory Update  
Brad Majek - Orchard Weed Control  
Robert Belding - Pre- and Post-Harvest Considerations for Apples  
Peter Shearer - Tree Fruit Entomology Update  
Dean Polk - IPM Insect and Disease Update

**Directions:** Take Exit 7A off the NJ Turnpike to I-195 East. Take the 2nd Allentown exit off I-195 (Route 539 South) 6-7 miles. You will pass the Cream Ridge Golf Course - we are about 2 miles past that on the right - look for the Rutgers Fruit Research & Extension sign.

Please RSVP by Sept. 4, 1997. For further information and to RSVP, contact Dr. Joseph Fiola, Rutgers Fruit Research and Extension Center, 283 Rt. 539, Cream Ridge, NJ 08514, (609) 758-7311, fax: (609) 758-7085.

# Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 85 degrees at several locations, on the 1st and 50 degrees at Trenton on the 30th. Weekly rainfall averaged 0.65 inches North, 0.50 inches Central, and 0.20 inches South. The heaviest 24 hour total was 1.33 inches at Trenton on the 28th to 29th. Estimated soil moisture, in percent of field capacity, this past week averaged 86 percent North, 72 percent Central and 66 percent South. Four inch soil temperatures averaged 66 degrees North, 70 degrees Central and 70 degrees South.

## Weather Summary for the Week Ending 8 a.m. Monday 9/1/97

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.44	22.73	-1.81	81	54	68.	1	2032	-174	76
CANOE BROOK	.58	24.04	-1.67	84	56	71.	3	2424	200	83
CHARLOTTEBURG	.72	24.96	-1.01	82	53	67.	2	1905	139	87
FLEMINGTON	.45	24.02	-.72	83	55	69.	1	2117	-164	86
LONG VALLEY	.91	25.03	-1.75	78	53	67.	2	1886	-82	90
NEWTON	.83	20.64	-3.36	78	52	65.	0	1757	-256	90
FREEHOLD	.33	23.41	-.73	85	56	71.	2	2408	-20	73
LONG BRANCH	.17	22.18	-2.31	80	57	69.	0	2320	-31	57
NEW BRUNSWICK	.37	29.39	5.00	83	56	70.	-2	2331	-204	84
PEMBERTON	.19	23.23	-1.59	85	66	76.	6	2700	223	45
TOMS RIVER	.22	25.75	.74	85	54	70.	0	2378	42	53
TRENTON	1.73	26.03	2.90	84	50	70.	-1	2306	-330	83
CAPE MAY COURT HOUSE	.00	19.72	-1.89	82	58	70.	-2	2465	139	53
DOWNSTOWN	.25	23.12	.26	84	55	70.	-1	2461	-180	62
GLASSBORO	.61	25.14	1.32	84	60	71.	0	2622	3	68
HAMMONTON	.24	25.12	1.30	83	54	69.	-2	2442	-181	62
POMONA	.11	32.78	10.79	80	55	68.	-1	2442	-3	56
SEABROOK	.02	23.95	2.11	83	58	71.	0	2627	-29	52
ATLANTIC CITY MARINA	.14	25.08	3.94	80	64	72.	1	2507	122	48
WOODSTOWN	.38	20.71	-2.77	85	55	70	NA	2646	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 203 (Ending 08/25/97)										
This Week 209 (Ending 09/01/97)										

**Editor's Note: Due to the Rutgers Cooperative Extension Annual Conference, there will be no Fruit edition newsletter next week (9/9/97). The newsletter will resume the following week.**

Rutgers Cooperative Extension - NJAES  
U.S. DEPARTMENT OF AGRICULTURE  
Rutgers - The State University of New Jersey  
P.O. Box 231  
Cook College  
New Brunswick, N.J. 08903-0231

Rutgers Cooperative Extension - NJAES  
U.S. DEPARTMENT OF AGRICULTURE  
Rutgers - The State University of New Jersey

## PLANT & PEST ADVISORY

### FRUIT EDITION - CONTRIBUTORS

#### Rutgers Cooperative Extension Specialists

Robert Belding, Ph.D., Pomology  
Joseph A. Fiola, Ph.D., Small Fruit & Viticulture  
Norman Lalancette, Ph.D., Plant Pathology  
Bradley A. Majek, Ph.D., Weed Science  
Peter Oudemans, Ph.D., Plant Pathology  
Sridhar Polavarapu, Ph.D., Entomology  
Peter W. Shearer, Ph.D., Entomology  
Craig A. Storlie, Ph.D. Agricultural Engineering  
NJAES/Cook College  
Joseph Goffreda, Ph.D., Breeding  
Edward Durner, Ph.D., Plant Physiology  
Rutgers Cooperative Extension Agricultural Agents  
and Program Associates  
Gloucester County, Jerome L. Frecon (609-863-0110)  
Hunterdon County, Winfred P. Cowgill, Jr. (908-788-1338)  
Morris County, Peter J. Nitzsche (201-285-8300)  
Warren County, William H. Tietjen (908-475-6505)  
Fruit IPM, Dean Polk (609-758-7311)  
Ken Petersen, Program Associate (908-788-1338)  
Gene Rizio, Program Associate (609-566-2900)  
David Schmitt, Program Associate (609-863-0110)

#### Newsletter Production

Jack Rabin, Assistant Director, NJAES  
Cindy Rovins, Editor and Designer

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

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