

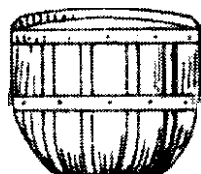
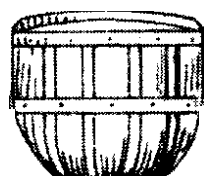
# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

SEPTEMBER 15, 1998

## Painless and Efficient Maturity Testing

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Our observation has been that few growers utilize the Starch Index (SI) method of determining harvest maturity. Perhaps SI testing is perceived as time consuming and difficult to properly judge. We contend, however, 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, where the starch to sugar ratio is measured, is correlated with ethylene evolution. In fact, 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.

Remember that, 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. Of course, reliability in using the SI method for determining apple maturity is predicated on good sampling techniques, i.e., looking at fruit that has sufficient size and color. Or, in other words, sample apples that you expect are approaching harvest readiness.

Note: Apples going into late CA (available in April-June, etc.) should not average less than 15 lbs. firmness.

Having tested tens of thousands of apples over the past few years via numerous experimental protocols, we can now suggest a simple, quick and efficient method for evaluating orchard by orchard or block by block SI apple samples. Here is our quick and simple testing technique:

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

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developed for Gala, Empire, and Liberty. On the west coast they have also been developed for Fuji. Use the chart and 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 one to one and one-half 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 1998 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, New Jersey county agriculture agents or visit the Virtual Orchard at <http://www.virtualorchard.net/>. □

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## Calendar of Events

**Feb. 17, 1999** - South Jersey Fruit Meeting and Trade Show, Masso's Crystal Manor, South Delsea Drive, Glassboro, NJ. Sponsored by Rutgers Cooperative Extension and the New Jersey Horticultural Society.

Contact Jerry Frecon at Rutgers Cooperative Extension of Gloucester County at 609-863-0110 for registration information.

## Apple Postharvest Treatments Revisited

*Dave Rosenberger, Ph.D., Plant Pathology, Cornell University, Hudson Valley Lab*

*Reprinted from Scaffolds Fruit Journal, Geneva, NY, Volume 7, No. 25, September 8, 1998 <http://www.nysaes.cornell.edu/ent/scaffolds/>*

CLARIFICATION: In the article on controlling postharvest decays on apples printed two weeks ago (9/1//98), I stated that "Captan provides good control of postharvest decays when used at the full label rate of 2.5 lb per 100 gallons of drench solution." That sentence should have read, "Captan 50W\* provides good control of postharvest decays when used at the full label rate of 2.5 lb per 100 gallons of drench solution." Postharvest rates for other captan formulations are Captan 80W at 1.6 lb per 100 gallons or Captec 4L at 1.25 quarts per 100 gallons. □

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## Deer Fencing Application/ Agreement Supplemental Deer Fence Program

Fencing is still available through the Deer Fencing Program. Contact your Rutgers Cooperative Extension County Agricultural Agent for the current application.

To be eligible to receive deer fencing under this joint initiative, an applicant must be:

- A New Jersey farmer having documented proof of a minimum of \$40,000 in sales or agricultural commodities produced by the applicant on their New Jersey farm.
- A farmer with a federal identification number.
- The owner of the land upon which the fencing will be erected.

PLEASE NOTE:

A New Jersey farmer listed on the Division of Fish, Game and Wildlife's existing list as of 12/1/97 is automatically eligible for the initial distribution in this program regardless of the two previous requirements and does not need to submit application to this supplemental program. However, those with applications pending at FG&W after 12/1/97 must fill out this application to be eligible for this supplemental allocation of fence. □

# North Jersey Tree Fruit Update

*Jeremy Compton, Plant and Soil Science Technician, and Win Cowgill, Agricultural Agent*

The glut of the harvest season will soon be upon us in Northern New Jersey with the many different cultivars maturing in the next two weeks. At the Rutgers Snyder Research and Extension Farm in Hunterdon County, maturity evaluations are being conducted weekly to determine the optimum time to pick the different cultivars in our apple cultivar trials. This year has proven difficult in predicting and determining optimum harvest maturity.

Temperatures reaching a low of 48°F in the Pittstown area last week aided in the development of good red color on most red cultivars. Older strains of Red Delicious such as Redchief have developed a good blush, but are still a week to two weeks away from harvest. At the Snyder Farm we are seeing a slight variability between strains of Red Delicious, so the grower needs to be aware of their particular strain to harvest accordingly. Last week, Sali Red Delicious was checked, and although a little immature, needed to be harvested due to the tendency of this particular strain to drop.

Golden Delicious are at harvest maturity now for short term cold storage and fresh market sales in the Pittstown area. Usually we see Red Delicious maturing a week ahead of Golden, but this year, the opposite is the case. This shows that growers need to be conscious of what is going on in the orchard and not count fully on historical records.

Jonagold is a cultivar that is ready for harvest in Hunterdon County. Jonagold and the many strains of Jonagold ripen unevenly and will benefit from multiple pickings. Background color is one of the best indicators of maturity for this cultivar. Jonagold has a tendency to go rapidly soft in storage, so plans for keeping this cultivar need to be considered at harvest.

As we indicated in our report in last week's Plant Pest Advisory, Empire matu-

riety is advancing slowly. Harvest appears to be another week to a week and a half off in the Pittstown area, and will place it in the traditional harvest window.

Growers that used Retain on Macintosh are seeing good fruit retention. Macs are hard to color this year and are benefiting from the extra week to ten days in maturity delay provided by the Retain. One grower reports that he has had better luck with Retain on Macs when applied 5 weeks prior to anticipated harvest rather than the 28 day labeled pre-harvest interval. This is consistent with our research observations with Retain in Northern NJ.

Growers are reminded that they can still use NAA for stop drop at 10-20 PPM on apples that need some help, especially drought-stressed trees. NAA needs 2-3 days following application to become effective.

## Some harvest indices in Northern New Jersey

Week of 9/7/98	Pittstown, Hunterdon County			
	Starch	Pressure	Brix	Seeds
Sali Red Delicious	3	18.05	0.117	3/4 mature
Superchief Red Delicious	2.9	18.9	0.103	3/4 mature
Golden Delicious	4.8	21.9	0.154	mature
Empire	3.3	20.5	0.11	3/4 mature
Week of 9/14/98	Pittstown, Hunterdon County			
	Starch	Pressure	Brix	Seeds
Superchief Red Delicious	3.15	19	0.123	mature
Oregon Spur Red Delicious	3.17	19.3	0.124	mature
Redchief Red Delicious	3.06	19.2	0.11	mature
Golden Delicious	5.1	17.2	0.126	mature
Empire	3.5	20.3	0.114	mature
Macoun	2.95	19.1	0.116	mature
Cortland	2.2	17.5	0.131	3/4 mature
Jonagold	4.7	19.45	0.144	mature
Week of 9/14/98	Hackettstown, Warren County			
	Starch	Pressure	Brix	Seeds
Redchief Red Delicious	2.4	20.3	0.1	3/4 mature
Empire	3	20.1	0.101	3/4 mature

# Summary of 1998 Peach Season

*Jerome L. Frecon, Agricultural Agent*

The 1998 season is winding down with most peaches to be shipped from cold storage at the end of the week in Southern New Jersey. Parade was the last variety harvested with good color and a decent crop.

It's always a good idea to make notes on what was good and bad about the season while the season is still fresh in one's mind. It was a good and a profitable season for many growers, but for others it was only fair and for some, even more difficult. On farm wholesale prices were quite volatile with those shippers not doing any forward selling. The season started about two weeks earlier than normal with strong prices through late July until the end of Redhaven and into Loring season. This has historically been a time when prices bottom out because of heavy volume from South Carolina, Georgia and the big O'Henry season in California. However in 1998 volume shipment records from all of these areas did not indicate this to be the problem. California was two weeks late and did not have particularly heavy volume at this time. Georgia and South Carolina did not have the volume of peaches earlier indicated. Prices seemed to be lower at this time because of poor market planning. Peaches from the south were arriving in northeastern markets with no destination. Offerings of 2 1/2 inch up yellow-fleshed peaches were being made for ridiculously low prices when they were not being merchandised in a timely fashion in retail outlets. A plentiful supply of 2 1/4 inch peaches were also being forced on the market with limited demand. The market remained somewhat depressed and didn't recover until late August. The market was strong and prices good in September. The demand and prices for yellow-fleshed nectarines were good all season. The demand for white-fleshed peaches was also strong but prices were quite variable because of limited supply. The Market News Service did not record prices for white peaches in New Jersey in 1998.

According to unofficial figures from the Federal State Market News office in Bridgeton, the volume of yellow-fleshed peaches shipped in 1998 was 1,812,000 1/2 bu boxes equivalent to 45,700,00 pounds. Volume shipped in 1997 was 1,585,200 1/2 bu boxes equivalent to 39,630,000 pounds. This represented a 12.5% increase in volume of yellow-fleshed peaches in 1998.

Approximately 167,000 boxes of nectarines were shipped in New Jersey in 1998 compared to 93,000 boxes in 1997. This represents a 44% increase in nectarine shipments.

In 1997 approximately 41,955,000 million pounds of peaches were shipped out of the total production of 65,000, 000 million pounds produced in New Jersey.

This represents about 65% of the total production. The balance of these peaches is not always utilized, but most are sold locally or on the farm either wholesale or retail. Some are also sold for baby food production. If the same volume distribution occurred in 1998, the total production would be 76,750,000 pounds of peaches and nectarines.

Unfortunately some fruit did not get harvested, and some fruit harvested and packed did not get shipped and had to be dumped. Other problems that occurred included:

1) Three to four nights of frost that did some thinning, but on a few farms reduced the crop. Cresthaven was injured the most, but surprisingly reliable varieties like Encore and Redhaven were also injured on some farms. Some fruit was injured with split pits and dropped prematurely. The finish on some nectarine varieties was also blemished by low temperatures;

2) A shortage of labor early in the season coupled with dry weather resulted in a significant volume of 2 1/4 inch and smaller peaches. Some growers did not start irrigating early enough, others couldn't get fruit thinned in time because of the early season. Other cultural practices like weed control, mowing, and fertilizer application lagged behind because of the early developing season of maturity. This also negatively impacted fruit size;

3) The mild winter and early spring caught some growers by surprise in terms of insect control. Black peach aphids appeared early and more frequently than at any time in the past 17 years. Green peach aphids virtually exploded early in the season causing significant damage on nectarines. Thrips damage was seen on both peaches and nectarines. Oriental fruit moth pressure was high on some farms and European red mites were terrible in some blocks. Some growers felt mite numbers reduced fruit size and quality. Many growers feel their insecticide bills were significantly higher;

4) Fruit finish on nectarines was particularly bad in some blocks. In addition to the earlier problems mentioned a few new ones were observed that were difficult to identify.

Most growers have totally converted all shipping containers to the 1/2 bushel box. More shippers put PLU stickers on their fruit although it was difficult to ascertain whether these grower/shippers had any more success marketing their crop.

New Jersey Peach Promotion council marketing consultant Charles Walker reported many favorable comments on New Jersey peaches. He reported on many nice displays, strong interest in New Jersey peaches and more interest in nectarines and white-fleshed peaches. The Jersey Fresh program continues to strengthen the demand for New Jersey peaches.

In a future issue we will discuss some of the things we can do to strengthen our peach industry. □

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