

# What's in Season from the Garden State

Biweekly Highlights from Cooperative Extension, a unit of Rutgers New Jersey Agricultural Experiment Station

October 13, 2008



Above: *Suncrisp*<sup>™</sup> (NJ55) - a favorite at North Jersey roadside stands. Below: *Ambrosia* apple at the Rutgers Snyder Research Farm planted in a Super Spindle production system at 2,000 trees/acre. Rutgers NJAES is part of NE183, a multi-state program researching apple cultivars for US production. Visit [www.ne183.org](http://www.ne183.org).

## Win's Picks

Look for these *Jersey Fresh* apples at your local farm markets and supermarkets (ripening dates are for North Jersey).

**Paulared** - late August  
**Ginger Gold** - late August  
**Zestar** - late August  
**Mollie's Delicious** - end of August  
**Cortland** - mid September  
**Early Fuji Cultivars**- 3rd week of September  
**Macoun** - end of September  
**Liberty** - around October 1  
**Ambrosia** - first of October  
**Crispen (Mutsu)** - around October 5th  
**Cameo** - early October  
**Suncrisp**<sup>™</sup> - mid-October  
**Pinova** - early October  
**Stayman/winesap** - end of October

## Apples: the Cold, Hard Facts

One of the true delights of autumn is that first juicy bite of a fresh crisp apple. If you can find apples in the supermarket all year long, how can you tell if those apples are indeed fresh fall apples, or apples that were picked months ago and held in cold storage?

First we need to understand what cold storage is. Win Cowgill, Agricultural and Resource Management Agent who serves as an area tree fruit agent for Rutgers NJAES Cooperative Extension, explains that apples continue to respire and ripen after picking. Cold storage slows down or stops this process from happening so the apples remain in good condition for months after picking.

There are two types of cold storage. **Common cold storage** regulates temperature and humidity. This is used by growers and warehouses to hold fruit up to 4 – 5 months. Roadside stands and chain stores use common cold storage as well to maintain fruit quality. Cowgill states, "if you put an apple on the counter for 3 days – it's done. If it is kept cold (33-35°F) when you bring it from the store it can maintain high quality for several months." Note that most refrigerators are kept around 40°F.

The second type of cold storage is **controlled atmosphere storage**. This is used for long-term storage. The atmosphere inside the storage room is modified by stripping the oxygen out of the air and adding CO<sub>2</sub> and regulating temperature (33 – 35°F) and humidity, all of which slow respiration. Apples can be held for up to 10 months in controlled atmosphere storage. This is used predominately by large warehouses located near the major apple producing regions.

The year-round selection of apples offered in supermarkets requires that optimal storage conditions need to be maintained from orchard to retail store. After leaving the warehouse (most often located in the major apple producing states – Washington, Michigan, New York and Pennsylvania), the refrigerated apples are in transport for up to a week and then are often transferred to a supermarket warehouse before distribution to individual supermarkets. According to Cowgill, for quality apples, the optimum conditions must be maintained throughout the entire chain – from farmer to packinghouse, to transport, to chain store and then by the store manager. The customer, however, is not off the hook. Storing apples in a fruit bowl or basket is fine for apples to be eaten within a day or two, however, left out at room temperature they will return to their respiration and continue to ripen. Hence, the best storage for apples at home is in the fridge.

## Guide to buying the freshest apples

Win Cowgill sums up the key to buying the freshest apples, "If you know where the apple comes from, you know how fresh it is." In the US we can buy fresh local apples in the fall from farm markets, tailgate markets and Pick Your Own farms as well as the chain stores. Year-round supplies of apples in supermarkets are from the previously mentioned major apple producing states in the US and from the southern hemisphere (Chile, New Zealand and Australia). Every apple in the chain store has a PLU sticker attached with the location where it was produced. Apple varieties that ripen in August in the US are sold fresh and held in short term common cold storage.

*Continued on page 2*

# RUTGERS

New Jersey Agricultural  
Experiment Station

New Jersey Department of  
Agriculture's Jersey Fresh &  
Seafood Availability Report

Apples  
Arugula  
Baby Arugula &  
Baby Spinach  
Basil  
Beets  
Cabbage  
Cilantro  
Collards  
Cucumbers/Pickles  
Dill  
Eggplant  
Escarole & Endive  
Kale  
Leeks & Green  
Onions  
Lettuces  
Parsley  
Peppers

Radishes  
Spinach  
Squash - yellow  
and zucchini; but-  
ternut & acorn  
Sweet corn  
Sweet potatoes  
Swiss chard  
Tomatoes  
Turnips  
White Potatoes



Butterfish  
Flounder  
Fluke  
Ling  
Lobster  
Squid  
Sword Fish  
Whiting

**Farm Raised Hard  
Clams & Oysters**  
Littlenecks/Middle-  
necks  
Specials  
Cherrystones,  
Chowders, Top-  
necks  
Cape May Salt Half-  
Shelled Oysters  
Delaware Bay  
Oysters



US apples ripening in September and October are held in common cold storage and also placed in controlled atmosphere storage rooms for longer storage times. Typically October apples can be held the longest (9-10 months) for sales to the chain stores. Apples from the southern hemisphere being to arrive in the US in February with Gala, and through April with Fuji and Braeburn. The shipping of these southern hemisphere apples can take up to 30 days in cold storage containers by ship.

What are Win's tips for finding the freshest apples? From August through October – buy *Jersey Fresh* apples. When buying supermarket apples, after February, look at the PLU sticker for where the apples were grown, and pick the ones from southern hemisphere countries. Says Cowgill, "If you buy a Gala from Washington in March, that apple is already five months old, whereas a Gala from Chile was picked a month ago."

The varieties from the US that are supplied year-round in supermarkets (and held in long term storage) are Empire, Red Delicious, Golden Delicious, Granny Smith, MacIntosh, Gala, Fuji and Braeburn. From February on, many of the same varieties from the southern hemisphere are available, primarily Gala, Fuji and Braeburn.

Even though cold storage maintains quality, eventually apples held longer in cold storage will lose quality. Cowgill offers further advice for ensuring quality, "My favorite apple in spring is Braeburn from the southern hemisphere – when at its freshest, it is hard and tart." Earlier maturing apples (August – September) like Gala, MacIntosh and Macouns are at their peak fresh-picked and eaten closer to harvest. After cold storage for 30 days they don't maintain varietal quality (smell, flavor and crunch) as well as other varieties that ripen in October. Red Delicious, Fuji and Braeburn are held in cold storage the longest – up to 10 – 11 months. It is best not to buy these varieties in August when they are the oldest."

**An apple a day (it's true what they say)**

And while we're on the subject of fresh apples, let's not overlook their contribution to a healthy diet. Kathleen Morgan, Chair of the Department of Family & Community Health Sciences, Rutgers NJAES Cooperative Extension provides some highlights on including apples in our diet:

Apples can provide a wonderful ability to keep us healthy, especially during the fall and winter. Apples and other fruit are considered to be healthy, in part due to the antioxidant flavonoids they contain.

Recent research on apples from the Linus Pauling Institute has shown that apples are one of the main sources of flavonoids in the Western diet, providing approximately 22% of the total phenols consumed per capita in the United States. It also provides about 13% of the daily value for vitamin C.

Apples contain both insoluble and soluble fiber. One medium (5 ounces) unpeeled apple provides over 3 grams of fiber, more than 10% of the daily fiber intake recommended by experts. Apple's insoluble fiber works like bran, helping to remove LDL cholesterol from the digestive tract, while apple's soluble fiber pectin reduces the amount of LDL cholesterol produced in the liver.

There are numerous ways to prepare, cook or bake apples, but nothing beats the taste of a fresh apple, especially with the many varieties that we have to choose from. Cowgill indicates there are over 6,000 named apple varieties - try a new one today and support your New Jersey apple producers.

To find locally grown apples in New Jersey visit the NJ Department of Agriculture web site at: <http://www.state.nj.us/jerseyfresh/searches/apple.htm>.

Where to find Jersey Fresh? Ask for it  
where you shop or dine or go to:  
<http://www.jerseyfresh.nj.gov>

To receive these reports by e-mail:  
[njfarmfresh@njaes.rutgers.edu](mailto:njfarmfresh@njaes.rutgers.edu)

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