

# What's in Season from the Garden State

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

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## New Jersey Pine Barrens: Birthplace of the Blues (berries)

**P**ines and barren. These words don't evoke thoughts of fresh local food as do images of pastures, farmland or orchards. Yet it is the very nature of this unique ecosystem with its acidic sandy soils that provides the perfect conditions for two native fruits: blueberries and cranberries. As the summer begins, blueberries arrive on the scene along with the first summer crops and last until August.

The blueberry is one of the most recent major fruit crops to be brought under cultivation, having been domesticated entirely in the 20<sup>th</sup> century. Up until the early 1900's, the way to acquire blueberries was for locals to forage in the Pinelands, picking the wild fruits. At that time, it was said among New Jersey farmers that blueberries could not be cultivated. The berries from the wild bushes varied greatly in flavor and shape, some being too sour or flat. Elizabeth Coleman White, daughter of cranberry grower Joseph J. White and resident of Whitesbog, NJ in Burlington County was interested in the possibility of adding blueberries to the family's cranberry crop but didn't know how to propagate the plants they found that had desirable traits.

In 1908 a researcher at the United States Department of Agriculture, Dr. Frederick Coville, began studying wild blueberries and seeking out superior plants for breeding. He made his first selection of plants on his home farm in the mountains of New Hampshire. In 1911, Elizabeth read a United States Department of Agriculture report on Coville's work and she wrote to invite him to continue his research at Whitesbog, the farm she worked with her father. Coville accepted the offer. For the next five years, Elizabeth White and Frederick Coville worked together. White located wild blueberry bushes by asking local Pineland people to help her find the best blueberries from the wild bushes. She wrote out directions for them to follow and named a bush after its finder. The area woodsmen taught her all about berry size, flavor, and ripening. She offered from one to three dollars to the woodsmen for marking the largest berry on any bush. Thousands of cuttings were taken to create the new varieties. In 1916, White and Coville produced the first commercial crop of blueberries.

In 1920, the introduction of cultivars from their breeding program served as the basis for an entirely new agricultural industry, which was adapted to the utilization of sandy, acidic, nutrient-poor soils that had been previously classed as agriculturally worthless.

Aside from cranberry production, this introduced agricultural production into an environmentally sensitive ecosystem. In New Jersey most blueberries are grown in the Pine Barrens, which is characterized by porous soils with high water tables, which are subject to vertical movement of a number of agricultural chemicals. This area is a source for much of the

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*Launched in 1916, the modern commercial blueberry industry was born in the New Jersey Pine Barrens. By taking cuttings of thousands of wild low-bush blueberry plants, Elizabeth Coleman White and Frederick Coville created new varieties which became our first commercial highbush varieties of blueberry.*

New Jersey Department of Agriculture's Jersey Fresh Availability Report



- Dandelions
- Dill
- Eggplant
- Kale
- Leeks
- Mint
- Nectarines
- Parsley
- Peaches
- Peppers
- Radishes
- Spinach
- Squash - yellow and zucchini
- Sweet corn
- Swiss Chard
- Tomatoes
- Turnips

**Current:**

- Arugula
- Baby Arugula & Baby Spinach
- Basil
- Beets
- Blueberries
- Cabbage
- Cilantro
- Collards
- Cucumbers



*Bee pollinating blueberry blossom. The softest materials are used when possible in consideration of these beneficial insects.*

surface and shallow groundwater found in the southern and central part of the State, and encompasses the Cape May, Rancocas, Great Egg Harbor, Mullica, and the Barnegat Bay watersheds, home to over 2.6 million people.

On top of the delicate ecosystem, blueberry farmers face all the agricultural challenges as farmers of other crops. Dean Polk, Rutgers NJAES Fruit IPM Agent explains that the pest complex on blueberries is extensive, with pests attacking virtually all parts of the plant (e.g., fruit, buds, leaves, roots, stems, flowers) with pest management programs that can require up to 12 pesticide sprays per year. Historically, the majority of the sprays were high risk materials, which were likely to adversely affect beneficial insects and expose farm workers in the fields. Blueberry maggot has been up to now the key insect pest, which can produce a maggot inside the blueberry, but two newcomers have entered the scene, the dreaded brown marmorated stink bug and the spotted wing drosophila, which can infest the fruit with multiple small maggots.

Considering the demands for this popular fruit, this mandates the implementation of pest management strategies that deliver high quality fruit with minimal insecticide residues.

Through the Rutgers NJAES Fruit Integrated Pest Management (IPM) program, Polk and colleagues, Cesar Rodriguez-Saona, Peter Oudemans, Eugene Rizio, and Gary Pavlis work with blueberry growers using a range of strategies that not only reduce pests, but improve yields through various practices, all lightening the environmental load on the sensitive pinelands.



*The larva of plum curculio, a beetle pest of blueberries.*

Some IPM practices include:

reducing the use of toxic pesticides in favor of soft, reduced risk materials, and alternate management strategies such as the use of intensive pest monitoring, degree day driven pest phenology models, action thresholds, pheromones and mating disruption, and GIS pest mapping.

Some of the outstanding benefits of the IPM program so far? Growers can minimize on-farm pest management costs and reduce pesticide and fertilizer use, resulting in reduced non-point source pollution while maintaining water quality. One new pest management practice uses an insect sex pheromone in place of a soil applied insecticide to control oriental beetle grubs, the root eating stage of oriental beetles, also common in turf and home lawns. Based on this collaborative research and demonstration work, a registration package was recently submitted to EPA for commercial use.

So, when you pick up your next container of big, plump beautiful Jersey blueberries, remember all the folks whose work brought you *better blues!*

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

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