

EXECUTIVE DEAN
OF AGRICULTURE AND NATURAL RESOURCES

September 2008

Spotlight on... Bee-ginner's Beekeeping



The diligent Western honey bee used to be a field and garden staple. Farmers and home garden enthusiasts took for granted the bee's pollen-laden flower-to-flower visits, which resulted in bountiful squash, melon, and tomato harvests.

But lately, the real buzz has been the honey bee's notable absence. Since the early 1970s, honey bee populations have been dropping throughout the United States, reaching alarming lows in 2006/2007. The number of beekeepers has declined as well. In New Jersey, there are now fewer than 3,000, down from a high of 5,000 a few decades ago.

This decline has many in New Jersey agriculture worried, and for good reason. Because feral honey bees are plagued with insect and bacterial parasites, managed beekeeping is essential to maintaining New Jersey's "Garden State" heritage. New Jersey depends heavily on honey bees for crop pollination and for the production of honey and related products.

The value of honey bee pollination to crop production in New Jersey was nearly \$84 million in 2002. Honey production in New Jersey--estimated at some 350,000 pounds annually--places the state 44th in the country in total production and 41st in total value of honey production.

In 2006, Rutgers New Jersey Agricultural Experiment Station's (NJAES) Office of Continuing Professional Education (OCPE) joined with the New Jersey Department of Agriculture and the New Jersey Beekeepers Association to address the decline in the state's bee and beekeeper populations by building on the OCPE's existing beekeeping class. The result was the creation of the "Bee-ginner's Beekeeping Program." The OCPE had offered beekeeping classes for over 40 years, and the partnership with the Department of Agriculture seemed like a natural way to boost interest and attendance in the already popular course.

The "Bee-ginner's Beekeeping Program" offers up to \$300 worth of beekeeping equipment and bees to the first 50 participants who meet requirements outlined by the New Jersey Department of Agriculture. The participants will be offered \$300 worth of credit toward beekeeping equipment and bees from registered New Jersey bee supply dealers. The program is currently funded by a grant from the Department of Agriculture's Division of Agricultural and Natural Resources.

"This class is extremely important because of the constant problem we're having with the loss of bees and beekeepers," said Bob Hughes, one of the Bee-ginning Beekeeper course instructors and a past president of the New Jersey Beekeepers Association. "We're hoping to get more people interested in beekeeping, and not just as a hobby, but as a commercial activity as well."

The program has proved successful beyond anyone's expectations. In 2006, 50 people completed the course and received free equipment, and 91 people attended the two Rutgers "Bee-ginner's Beekeeping" courses that were added that year. The majority of those who attended the course reported that they not only started to keep bees, but also said they

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intended to add more colonies. A significant number expressed interest in becoming commercial beekeepers.

In spring 2008, the classes were so popular, a waiting list was created and an extra class was added to the roster for fall 2008, with more planned for spring 2009 (registration information below).

The two-and-a-half day course covers everything from the kind of bees and equipment keepers need to get started to products that can be produced by a hive. Instructors will also cover bee diseases and colony management and structure. Those who have already completed the Bee-ginners Beekeeping class may be interested in an advanced beekeeping class to be offered late in fall 2008. The class will act as a bridge for current beekeeping hobbyists who wish to begin a commercial beekeeping enterprise. The course is open to all New Jersey residents over 10 years of age.

Faculty and Staff Activities and Accomplishments

Barbara O'Neill, Specialist in Financial Resource Management, was inducted into the Sussex County Agricultural Hall of Fame at the Sussex County Farm and Horse Show/New Jersey State Fair on August 6.

Grants

Ellen Dilorio (4-H volunteer) and **James Nichnadowicz** (Union County 4-H agent) received \$1,000 in funding from the Union County H.E.A.R.T. (History, Education, Arts Reaching Thousands) Grant Program. Funds will be used for the creation of a Union County 4-H Living History Club.

Beth Ravit (Environmental Sciences) and **Rob Miskewitz** (EcoComplex) received \$30,000 from NY/NJ Baykeeper for a Raritan Bay oyster restoration study.

Lisa Rothenburger (Somerset County 4-H agent), through the Raritan Valley Community College Foundation, received \$100,000 to be used for the construction of the first public observatory in Somerset County. The observatory is a collaborative venture between RVCC Planetarium and the Somerset County 4-H Youth Development Program.

Outreach Efforts: Public/Community Service

Peaches

New Jersey has a long history of producing peaches. The state for many years has ranked 4th or 5th in production measured by acreage and yields behind California, South Carolina, and Georgia. In 2007, New Jersey was number 2 in the nation in total peach production. South Jersey peach and nectarine production occurs on approximately 7,100 acres, with a 2007 production value of \$33 million and a tree value of \$135 million. Ninety five percent of the peach crop is grown in a six-county area. Approximately 45 southern region commercial peach growers grow and market peaches for the wholesale and retail market.

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A wide range of insects, diseases, nematodes, weeds, and wild life reduce peach tree health and also blemish and damage the fruit. To sustain this industry, Rutgers NJAES has focused on research and education to keep peach orchards healthy and productive. Research helps growers produce high quality fruit in a cost-effective manner, and harvest, handle, and store peaches to meet the needs of a competitive market. A team of Rutgers NJAES faculty and staff has major programs in peach science production in South Jersey and includes: **Dean Polk** (IPM fruit agent); **Dave Schmitt** (IPM fruit program associate); **Jerome Frecon** (Gloucester County agricultural agent); **Brad Majek** (specialist in weed science); **Peter Shearer** (specialist in fruit entomology), **Norman Lalancette** (specialist in tree fruit pathology); **Dan Ward** (extension specialist in pomology); and **Joe Goffreda** (research professor, fruit breeding).

Applied research was conducted on the testing and evaluation of fruit cultivars; the post-harvest physiology and evaluation of peaches; the effect of cable girdling on early maturing peach varieties, and the effect of Retain on peach drop and maturity. Seven new peach varieties are being developed. The team also developed and delivered information on other horticultural practices. Information was shared at meetings, through the New Jersey Peach Festival with over 30,000 people, and a fruit variety showcase with 65 growers, breeders, and nurserymen in attendance.

Three specialists conduct applied peach research in weed science, tree fruit pathology, and fruit entomology. Information on their accomplishments and recommendations was delivered in 2007 at the Mid-Atlantic Fruit and Vegetable Convention and Trade Show to 980 fruit growers. In-depth information was also presented at the South Jersey Fruit Meeting to 73 growers. Three twilight and evening fruit meetings were held to deliver information to 148 growers. An early summer tour and fruit research meeting was held for 111 growers. Educational information was delivered to 80 of the state's peach growers and 390 other growers, researchers, and allied industry people, and to 14 agricultural libraries through the quarterly publication of *New Jersey Horticultural News*. Sixteen articles on fruit science were published to assist these growers, with seven of those articles on peach science. One hundred thirty copies of the *2007 Commercial Tree Fruit Production Guide* were sold and distributed, and five new fact sheets on fruit varieties and variety sourcing are in review. One fruit variety release has been written for publication office and is being reviewed. A newsletter called *Plant and Pest Advisory-Fruit* is produced and mailed to 235 subscribers. An additional 1,850 hits and downloads were received in 2007 on the newsletter at the NJAES website.

Peach production in 2007 was 64 million pounds. Production efficiency (yield per acre) improved, but due to low temperatures during bloom in the spring, the volume was reduced in 2007. Peach prices were lower by about 1.2 cents per pound in 2007. The challenges are many for New Jersey growers, but the peach science research and outreach production program has stabilized the industry. There is continued success in evaluating and introducing new cultivars. Based on an informal survey with fruit trees nurseries all of the major varieties planted in New Jersey are the result of Rutgers' peach and nectarine cultivar research program. There have also been major impacts in researching novel and other types of peach varieties now recommended to New Jersey growers. The production of nectarines has declined slightly because of pest management problems, but two varieties researched and tested for growers are the yellow-fleshed varieties, Easternglo and Flamin Fury PF 11; and the white-fleshed varieties, Arctic Star, Arcticglo, Arctic Sweet, Arctic Jay, and Arctic Pride.





Research continues to make an impact in the slow resurgence of white-fleshed peach varieties. From NJAES research and recommendations, growers continue to plant Spring Snow, White Lady, Klondike, Sugar Giant, and Snow Giant. There has also been a slight increase in plantings of flat peaches with Saturn and the newly developed varieties from the NJAES program; NJ 14, NJ 15, NJ 16, and NJ 17. Almost 900 trees of these new flat peach varieties have been or will be planted in 2007 and 2008.

The peach pest management research program has a major impact on peach plantings and sustainability in southern New Jersey. Ninety percent of our growers follow weed management programs utilizing the pesticides that NJAES evaluates and recommends. Approximately 25% of them follow the groundcover management recommendations with sod centers. Because of the high incidence of pest pressure, 99% follow ongoing pest management recommendations for disease and insects. Research has improved the control of diseases like brown rot, peach scab, rusty spot, and bacterial spot resulting in better fruit quality and tree health. Varieties have been identified with natural tolerance or susceptibility to rusty spot and bacterial spot. NJAES research has developed many alternatives in insect management through the use of better ground cover management, and insect pheromones and mating disruption to reduce insecticide applications. All of these have helped the viability and sustainability of New Jersey's peach industry.

Water Quality and Watershed Protection in Union County Through Rain Garden Education

The Robinson's Creek Branch of the Rahway River, located in NJ's Watershed Management Area 7, is moderately impaired for aquatic life, fecal coliform, and total phosphorus. Severe flooding and drought conditions often plague the area. A rain garden is a shallow depressed area landscaped with native plants designed to capture and recharge stormwater runoff on residential properties. The installation of rain gardens into existing landscapes is a recommended best management practice (BMP) to improve water quality and the related issues in the watershed area. Residential property owners need to be educated about how to design, install and maintain rain gardens. **Madeline Flahive DiNardo** (Union County agricultural agent) has led an effort to enhance water quality.

Four public demonstration rain gardens were installed by Master Gardeners in fall 2005 in cooperation with **Christopher Obropta**, Extension Specialist in Water Quality, and the Rutgers Water Quality program. These gardens treat and recharge water run-off from 17,000 square feet of impervious surface. Approximately one million gallons of water have been treated so far.

Educational programs were held at three of the sites and attended by 30 adults, including municipal and county planning board members and a Freeholder. These public demonstration gardens caught the attention of the Springfield Environmental Commission, which led to the installation of a fifth public demonstration garden in May 2007.

The educational programs provide assistance to property owners who need aid with labor and improving drainage on their property. In addition, the program offers training to professional landscape companies so that they can offer rain garden installation as a service. The training program is a component of a grant awarded by the United States Department of Agriculture, Cooperative States Research, Education and Extension Service National Water Quality Initiative Program.



Bill Bamka, Burlington County Agricultural Agent, coordinated a hay and pasture twilight meeting at the Rutgers Adelphia Turf Research Center, Adelphia, NJ on July 29.

The **Water Resources Program** held a Rain Garden/Bioretenention Research and Extension Symposium on May 29–30 at The Heldrich, in New Brunswick, NJ; 118 people attended. Attendees included representatives from the New Jersey DEP; United States Geological Survey; United State EPA-Region 2; New York City DEP; Rutgers, the State University of New Jersey; New Jersey Institute of Technology; North Jersey Resource Conservation and Development Council; AmeriCorps; and Environmental Commissions throughout New Jersey. This symposium was presented by the Rutgers Cooperative Extension Water Resources Program, New Jersey Sea Grant Extension Program, and the USDA CSREES Regional Water Coordination Program for New York, New Jersey, Puerto Rico, and the Virgin Islands.

Maria Young (Passaic County FCHS educator) conducted a bus trip to Eden Farms in West Milford for 42 children and counselors as part of the "Passaic County Residents Eat Jersey Fresh Produce for Good Health" grant. The children participated in the tour to learn where their food came from and learned about the growing process for vegetables and plants. They were participants in Paterson's Summer Recreation program.

Mark Your Calendars!

The Annual Conference of the Community Food Security Coalition: Restoring Our Urban & Rural Communities with Healthy Food

WHEN: October 4–8

WHERE: Crowne Plaza, Cherry Hill

WHAT: Eleven concurrent tracks on issues such as local food systems, community food security, urban agriculture, and food business incubation. In addition, there will be 12 field trips on Saturday and Sunday before the conference.

MORE INFO: foodinnovation.rutgers.edu/2008CFSCConferenceBrochure.pdf

The Food Innovation Center Grand Opening

WHEN: October 17, 10 a.m.

WHERE: 450 East Broad Street (Route 49) in Bridgeton

WHAT: The event will include presentations from federal, state, and local dignitaries who have made this occasion possible, and will be followed by a ribbon cutting and guided tours of the new facility.

RSVP: <http://foodinnovation.rutgers.edu/ficrsvp.asp>

This report is produced by the Office of Communications. For information or to provide comments, please contact Amanda Kolling at kolling@njaes.rutgers.edu or 732-932-7000, ext. 4205.

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