

A REPORT FROM THE  
EXECUTIVE DEAN  
OF AGRICULTURE AND NATURAL RESOURCES

Report to the New Jersey State Board of Agriculture  
August 2014

The research of **Nicholi Vorsa**, extension specialist in cranberry and blueberry breeding and management and director of the Philip E. Marucci Center for Blueberry and Cranberry Research and Extension in Chatsworth, was featured in the May issue of *Fruit Grower News*. **Vorsa** received a competitive grant from USDA that focuses on the development of a high-resolution genetic map for cranberry. The process includes the mapping of locations and regions on the cranberry genome associated with fruit rot resistance and other economically important traits, including fruit polyphenolics, yield and fruit size, fruit set and other factors that will allow for marker-assisted selection for future breeding programs. In the initial evaluation of his extensive collection of germplasm, **Vorsa** discovered that often plots of a specific variety were actually composed of several distinct varieties. Since cranberry spreads vegetatively by stolons (over-ground stems), varieties can intermingle. Cranberry varieties vary in their vegetative vigor and many 'off-type' varieties have invaded and established themselves in established cranberry beds over time. Even if a grower has planted a bed with vines that are mostly of the desired variety, the off-type varieties will vegetatively out-compete the productive varieties, becoming more widespread in the new planting. **Vorsa** was prompted to develop the first DNA fingerprinting technology for cranberries, followed by the development of "sequence-characterized amplified regions." Using this technology, he found that while there were only 40 to 50 known named varieties, there were likely thousands of cranberry varieties. Although the DNA fingerprinting technology enabled individual varieties to be readily distinguished from one another, many years of work, including replicated variety field trials, were required to determine which individuals possessed valuable traits, such as yield, color, and disease resistance; and which would be the best parents in improving these traits. Once the germplasm was sorted out, many hundreds of controlled crosses were made in the greenhouse and their progeny evaluated in thousands of plots. Traits were evaluated over multiple years and the best plants were selected and the process of crosses, evaluation and selection was repeated.

Stephen C. Brown, national chair and editor of the *Journal of the National Association of County Agricultural Agents*, reported to NJAES Director **Larry Katz** that Rutgers Cooperative Extension faculty lead all other Land-grant universities in the number of articles that have been published in the journal. Brown was impressed by this high publication rate in light of the fact that Rutgers has a relatively small number of Extension faculty compared to states like Texas or Ohio. In an e-mail to **Katz**, Brown stated, "I congratulate you on nurturing an Extension program that fully embraces the ever-increasing importance of scholarship in Extension."

There's a proposed rule open for public comment with respect to allowing the importation of apples into U.S. markets from China. **Anne Nielsen**, specialist in fruit entomology, reported in the *Plant & Pest Advisory* that the pest risk assessment has identified 21 pests that are on U.S. quarantine lists that could be introduced in/on apples from China. **Nielsen** notes that although assurances have been made that fruit will be inspected and may be fumigated prior to entrance into the U.S., importation increases the likelihood that pests such as the Oriental Fruit Fly (OFF), the plum fruit moth (PFM) and the summer fruit tortrix (SFT), could be accidentally introduced. The OFF has 150+ host plants, including peach, and has already been accidentally introduced into the U.S. The PFM is a serious pest of stone fruits in Asia and Europe and its larvae tunnel into fruit. The SFT is listed as an exotic of high risk to the U.S. and feeds on over 50 plant hosts, including pome and stone fruit, hardwood trees, and grapes. It also attacks leaves, shoots, and fruits. **Nielsen** notes that invasive species are organisms that are not native to the region and become significant pests, with several invasives already established in tree fruit, such as the Brown Marmorated Stink Bug, Oriental Fruit Moth, and San Jose scale. According to **Nielsen**, comments on the proposed rule can be submitted electronically at <http://www.regulations.gov/#!docketDetail;D=APHIS-2014-0003>.

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## Of Interest:

New Jersey county fairs are held in July, August, and September. In 1914, during Cooperative Extension's inaugural year, initial efforts in New Jersey were to acquaint the public with the nature and requirements of agricultural extension. One year later, Cooperative Extension became connected to New Jersey county fairs. In 1915, educational exhibits were shown at 13 fairs – county, grange, state and inter-state. Since then, Extension has been involved in county fairs in various ways, with its staff often acting as judges. Today, most New Jersey counties have a county fair and each year staff, volunteers, and families invest a great deal of time and effort to organize, promote, and run the events, which offer agricultural displays, county exhibits, food vendors, and 4-H club events and displays.

## Events:

The annual **Great Tomato Tasting** will take place on Wednesday, August 27, 2014, 3pm to 7:30pm at Rutgers Snyder Research Farm, 140 Locust Grove Road, Pittstown, NJ 08867. In addition to 80 varieties of tomatoes to taste, activities will include a chef's cooking demonstration and tasting, guided educational wagon tours of the farm's research plots, tastings of various fruits and herbs, access to the farm's gardens with opportunities to ask questions and get answers, insect displays, and information booths. Visitors will also be able to walk a turf labyrinth, which is currently being grown at the farm as an added attraction to the public. To register for the Great Tomato Tasting, go to: <https://njaes.rutgers.edu/rsvp/tomato>.

In 2013, **the IR-4 project**, which was established by the directors of the state agricultural experiment stations and the USDA to assist growers of fruits, vegetables, herbs, and other specialty crops with their critical pest management needs, celebrated 50 years at Rutgers.

The annual **IR-4 Food Use Program** priority-setting workshop (FUW) is being held on September 9-10 at the J.W. Marriott Atlanta Buckhead, 3300 Lenox Road NE, Atlanta, Georgia, 30326. Projects will be selected as "A" priorities for 2015 research based on the most critical needs of specialty crop growers. In addition to the traditional Food Use priority setting focus of this meeting, this year will incorporate a new **Biopesticide and Organic Support Program** priority-setting workshop following the FUW. This Biopesticide Workshop is an important part in the changes to IR-4's Biopesticide grant program. The meeting will consist of presentations of research successes, exploration of needs and potential tools to fit the needs. These will fit within the context of the overall strategy of integration of biopesticides into conventional agriculture, resistance management, utilization of biopesticides for residue mitigation of convention pesticides to avoid trade barriers, organic agriculture, and biotechnology opportunities. The scope of crops will include all specialty crops such as fruits and vegetables, ornamentals, and honey bees and will also include public health biopesticides.

IR-4 will also be hosting the first **Bacterial Challenges Mini Summit** titled "Understanding the ABCs (Awareness of Bacterial Challenges) with Antibiotics in Crops" at the J.W. Marriott Atlanta Buckhead on September 11, 2014. This mini-summit will provide an opportunity for attendees including growers, university personnel, industry, and government agencies to come together to discuss a number of issues related to bacterial diseases, including HLB and Citrus Canker on citrus crops, Zebra Chip on potato, and other diseases and crops. Options for control and the regulatory review processes that are involved with registering these compounds will also be discussed at the mini-summit. For more information, visit: <http://ir4.rutgers.edu/FoodUse/FUWorkshop/index.html>.

