Report to the New Jersey State Board of Agriculture
September 2015

In the August 31 issue of *American Vegetable Grower*, **Brett Blaauw**, a post-doctoral research associate in entomology, was interviewed on sustainable pest management practices to control Brown Marmorated Stinkbug (BMSB). **Blaauw** is working on a multi-state grant, led by Extension Specialist in Entomology **Anne Nielsen,** Department of Entomology, which investigates sustainable control methods for BMSB, including row covers, trap crops, natural enemies, barrier protection, and biological controls. **Blaauw** listed some benefits and costs for each type of control. Row covers can help with temperature regulation, especially for bell peppers. A fine-mesh row cover significantly reduces the amount of stinkbug damage, but can increase the cost of production, and in a system like peppers, may actually reduce crop yield. However, overall there would be a cost-saving due to a reduction in insecticides and the increase in the amount of marketable peppers. Trap crop research involves assessing planting sunflowers and sorghum along borders and surrounding plots of bell peppers for BMSB management. It is anticipated that early in the season, sunflowers are more attractive to BMSB than peppers and, later in the season, sorghum is more appealing, hence "trapping" the bugs before they attack the peppers and minimizing the need for chemical control. The research is also investigating native natural enemies that are known to feed on native stinkbugs to quantify how effective they are at potentially controlling BMSB. Many of the generalist predators like lady beetles, spiders, and ants, have been found to feed on BMSB eggs and nymphs.

Apples growing on NC-140 rootstock at Snyder Research Farm.

The Snyder Research and Extension Farm in Pittstown is the Rutgers University Center for Sustainable Agriculture. The farm conducts research applicable to the production of a variety of products including grain crops, tree and small fruits, turfgrass, and ornamentals. Its 390 acres provide a valuable capacity for research conditions and crops of northern New Jersey. Research conducted during the 2015 growing season focused on companion plants, such as dill, to attract beneficial insects to control European corn borer; native plants that attract native pollinators; switchgrass production for use as biofuel; peach cultivar evaluations for hardiness, disease resistance, productivity and taste; NC 140 apple rootstock evaluations to determine insect and disease resistance and tree longevity; field corn fertility trial comparing traditional, organic and control amendments; hops evaluation of ten different varieties and chemical analysis for local microbrewery industry growers; catnip breeding trials (see below); and "retro" Rutgers tomato breeding selections.

CR9 catnip in breeding trial at Snyder Research Farm.

Farmers and home gardeners may be as attracted to the new lines of catnip being released by Rutgers NJAES as cats are. The new varieties have larger leaves and flowers, which produce more of the essential oils that cats go crazy for. Rutgers Department of Plant Biology and Pathology faculty **Jim Simon**, professor of New-Use Agriculture, and doctoral student **William Reichert** have developed lines with a custom-designed essential oil composition. **Simon** has spent more than a decade developing the new breed, CR9, for the insect repellant and pet toy industries. The product was recently licensed to Ball Horticulture for commercial seed production. Up to now, catnip oil has been too expensive to use as a repellent but it has been shown to repel mosquitoes, flies, cockroaches, termites, dust mites, and deer ticks; with this new release, that may change.

Cobalt toxicity and its ability to increase red blood cell production in humans have been known for decades. There has been renewed interest in cobalt as a performance enhancing drug (PED) in race horses and human athletes. The possible toxicity associated with PED has concerned the horse industry. The U.S. Trotting Association is funding a study by equine researchers and Department of Animal Sciences faculty **Karyn Malinowski**, director of Rutgers Equine Science Center (ESC), and **Ken McKeever**, associate director of research at ESC, in cooperation with George Maylin, Morrisville State College in New York State, to evaluate the effects of cobalt on red blood cell production and performance enhancement in horses. While racing jurisdictions have set thresholds to regulate the use of cobalt because of its known toxicity in humans, there is currently no scientific evidence to determine an appropriate threshold for horses since dose-response studies have not been reported. Eight healthy, trained Standardbred mares will be used in the research study. Before receiving any drug treatment, all animals will complete a series of baseline testing.

The Rutgers Food Innovation Center (FIC), a globally-recognized incubation program that provides business and technology expertise to startup and established food companies in the mid-Atlantic region, utilizes its outreach capacity to support food and agribusinesses throughout the world. FIC is launching *RutgersX*, the first business accelerator program at the university. Business accelerators provide a cohort of entrepreneurial companies with a mentoring team that brings professional expertise and a venue in which they can "pitch" their business to a community of angel and venture investors, strategic partners, and retail and food-service customers. The *RutgersX* Accelerator will serve the fast-growing food companies that have been part of the FIC client and partner network for the past several years. These companies will be showcased at a first-ever *RutgersX*- Accelerating Food Entrepreneurs Conference on November 16, 2015, in New Brunswick, NJ. The conference will feature pitch presentations from companies to an audience of potential funders, strategic partners, customers, and fellow food entrepreneurs. Panel discussions with food industry leaders, conversations with successful entrepreneurs and venture capitalists, along with remarks from state and national government leaders, are on the agenda. The program was made possible with funding from the U.S. Small Business Administration (SBA). Last year, FIC was a national winner of the SBA's first program designed to create or enhance business accelerators. It was the only award recipient in New Jersey, and one of only 50 winners nationwide among more than 800 applicants.

Of Interest:

Rutgers NJAES New Jersey State Climatologist **Dave Robinson** summarized the weather in August as having great variability around the state, with some areas experiencing flash floods and others approaching drought conditions. One storm even produced a nocturnal "heat burst" (a rare, atmospheric event characterized by gusty winds, a rapid increase in surface temperature, and a decrease in surface dewpoint associated with a dissipating thunderstorm). Some minor brush fires and declining river, ground water, and reservoir levels accompanied subnormal rain totals. The dry conditions helped produce some wide daily swings from cool nighttime temperatures to consistently warm daytime maximums. Preliminary values show August 2015 with a statewide average rainfall of only 2.18,"below normal by 2.03" and ranking as the 13th driest since statewide recordkeeping began in 1895. The 74.5° average temperature was 1.1° above the 1981–2010 mean and ranks 21st warmest in New Jersey.

Events:

Rutgers Twilight Tour & BBQ

Thursday, October 1, 2015, 4:30 – 8:00 p.m., Rutgers Fruit & Ornamental Research Extension Center, 283 Route 539, Cream Ridge, NJ 08514. Contact: 732-431-7260, ext. 7280. Cost $10.