

## **Project: Sustainable Vegetable Production - Integrated Pest and Crop Management for Vegetables**

**Project Leader: Katie Campbell-Nelson**

### **Project Overview:**

Through diverse methods the vegetable team will educate growers about environmentally and economically sound crop and pest management practices, invasive pests, changing pest conditions, innovative practices. Field based projects will assist growers to test and use new practices. Specific new practices include biological control of two key pests (Mexican bean beetle in beans, European corn borer in peppers and corn), mitigation of soil borne diseases with cover crops and reduced tillage; Numerous educational programs and publications will reach over 1000 growers using social media as well as newsletters and website for pest alerts; scouting networks for sweet corn pests, late blight, and other pests; educational programs throughout the year including the New England Vegetable and Fruit Conference; release of the new edition of the New England Vegetable Management Guide.

### **Activity Summary – 2015**

- Extension Publication Articles (4)
- Collaborative programs with other organizations and institutions (SARE, MDAR SEMAP, NEVBGA, NRCS, NOFA-USDA Northeast Climate Hub) (13)
- Rich Bonnano serves on the following boards and committees: Pesticide Board, Rights of Way Committee, EPA Farm, Ranch and Rural Communities Committee, IR-4 Commodity Liaison Committee and American Farm Bureau Board of Directors (5)
- Collaboration with SARE – Katie Campbell-Nelson serves as state coordinator and helps applicants submit successful grant proposals (1)
- Collaboration with MDAR – working with MDAR staff to provide educational programming on the proposed Nutrient Management Regulations which will go into effect 12/5/2015 (1)
- We applied for and received funding from (\$180,432) nine grant sources this year, plus an additional \$18000 from crop protection companies.
- Updated and released 2016-2017 version of the NEW England Vegetable Management Guide edited by Lisa McKeag and Bess M. Dicklow.
- On-farm consultations (100)
- On-farm trial “Growing Mustard as a biofumigant to manage Phytophthora Blight and Plant Parasitic Nematodes (2)
- On-farm trial “Evaluation of Biological Fungicides to Control Diseases of Spinach in

- Winter High Tunnels” (1)
- UMass South Deerfield Research Farm trials conducted by Susan Scheufele: “Organic Management of Basil Downy Mildew at the Advanced Stage”, “Evaluation of biopesticides to control common diseases of Brassicas”, and “Insecticides for control of cabbage root maggot in spring cabbage”. (3)
  - Articles published: • Scheufele, S.B., Campbell-Nelson, K. and R. Hazzard. 2015. Evaluation of biological fungicides to control Alternaria leaf spot of *Brassicas*, 2014. Plant Disease Management Reports. Volume 9:V004. • Scheufele, S.B., Campbell-Nelson, K. and R. Hazzard. 2015. Evaluation of copper fungicides to control basil downy mildew, 2014. Plant Disease Management Reports. Volume 9:V001. • Scheufele, S.B., Campbell-Nelson, K., McKeag, L., and R. Hazzard. 2015. Evaluation of diamide seed treatments to control cabbage root maggot (*Delia radicum*) in broccoli, 2014. Arthropod Management Tests. (In Press). • Scheufele, S.B., Campbell-Nelson, K., McKeag, L., and R. Hazzard. 2015. Evaluation of insecticide drench treatments to control cabbage root maggot (*Delia radicum*) in cabbage, 2014. Arthropod Management Tests. (In Press). (4)
  - Regional scouting and monitoring network for vegetable diseases and pests on 20 farms over 6 different states by 15 Extension educators and hired scouts. Reporting occurred weekly online and by phone. Reports were used to write and publish **Pest Alerts** reaching over 2,000 subscribers on a weekly basis May – September, in **Vegetable Notes**, and other publications around the region (1)
  - UMass Vegetable and New England Vegetable Management Guide Website managed by Lisa McKeag (1)
  - Educational Presentations: IPM, Vegetable Diseases, Pesticide Safety, Hot Water Seed Treatment, nutrient management, Biological control of pests and diseases, Flood Protection (10)

***Total Educational contacts***

	Youth Contacts	Adult Contacts
In Person		5288
Indirect Contacts (Print, Web, etc...)		82418

**Narrative Summary and Impact**

A lot of staff changes have occurred in the “Integrated Vegetable Crop and Pest Management” project this year, and the new team of qualified and engaged Extension Educators has brought renewed energy to this project. Three new staff members were hired: Katie Campbell-Nelson as Vegetable Program team leader specializing in nutrient management; and two primarily grant funded positions: Susan Scheufele as Extension Educator III specializing in plant pathology and applied research, and Lisa McKeag as Extension Educator II specializing in risk management, and educational programing. One staff member retired: Ruth Hazzard as Vegetable Program team leader after 26 years. One staff member remained unchanged: Rich Bonanno at 50% time

specializing in weed management, food safety and agricultural policy. As a team, we have engaged new stakeholders, revitalized our applied research program, and responded to regulatory changes impacting stakeholders. We have been successful in garnering external funds to support the expansion of this project and the scope of our efforts to address stakeholder needs. We continue to provide advanced IPM training through mentor farm relationships and have expanded our outreach to beginning farmers regionally through on-farm IPM scouting and monitoring training.

We collaborated with other Principle Investigators on the following projects: Risk Management Education on Worker Protection Standards for Organic Growers”, Kathleen Carroll, PI (RMA) -\$11,083. We provided train-the-trainer programming to 152 organic growers on worker protection safety standards. This audience has been underserved in this area and received valuable education.

“Multi-level Extension Delivery to Support IPM for Massachusetts Vegetable and Fruit Growers” H. Sandler, PI (USDA EIP) - \$298,739. Ten growers received whole-farm mentorship in implementing farmer identified IPM goals through regular, biweekly visits throughout the growing season. These “Mentor Farms” served as locations for field walks and twilight meetings for 125 participants this year. Four on-farm research and demonstration projects were developed with farmers on organic and reduced risk pesticides for cabbage root maggot, and growing mustard as a biofumigant for management of *Phytophthora capsici*. We hosted an advisory meeting attended by 25 farmers and 12 agricultural service providers from across Massachusetts to prioritize our research and educational programming which informed our program efforts.

We launched a Hot Water Seed Treatment Service this year and have served farmers in CT, MA and NH. It is the only service of its kind among Universities in New England.

**Collaborating Organizations:**

- **NRCS**
- **Regional New England Extension Educators**
- **Eastern Massachusetts CRAFT**
- **South Eastern Massachusetts Agricultural Partnerships SEMAP**
- **New England Vegetable and Berry Growers Association NEVBGA**
- **Massachusetts Department of Agricultural Resources MDAR**
- **Community Involved in Sustaining Agriculture CISA**
- **Northeast Organic Farmers Alliance NOFA**
- **Sustainable Agriculture Research and Education SARE**

