

### Vegetable Program Annual Report: October 2016-2017

Our team of Extension Educators includes: Katie Campbell-Nelson (nutrient management and team leader), Lisa McKeag (food safety and *New England Vegetable Management Guide* co-editor) and Susan Scheufele (plant pathology and applied researcher). Lisa obtained lead trainer status from the Produce Safety Alliance this year and has been traveling around New England providing valuable and required training to producers in preparation for implementation of the Food Safety and Modernization Act. Katie organized Vegetable Winter School and conducted 6 on-farm trials on nitrogen from cover crop this year. Sue has completed a second year of data collection and expanded her research this year to tackle growers questions about cabbage aphid, brassica disease and cucurbit downy mildew management. We were greatly supported by departmental assistants Annalisa Flynn, Genevieve Higgins and Michele Meder this year without whom we would still be out in the fields shivering and counting aphids, unable to keep up with grower needs! Following is a report of our outputs and impacts this past year.

UMass Extension Vegetable Program Outputs and Impact		
11 research trials	conducted on	7 farms
30 farms	received	130 on-farm consultations
33 educational programs	attended by	1,747 people
24 issues of Vegetable Notes	received by	2,791 subscribers
3 websites (UMass Vegetable Program, Food Safety for Farmers, and New England Vegetable Management Guide)	visited by	125,212 people

#### Impact Highlights:

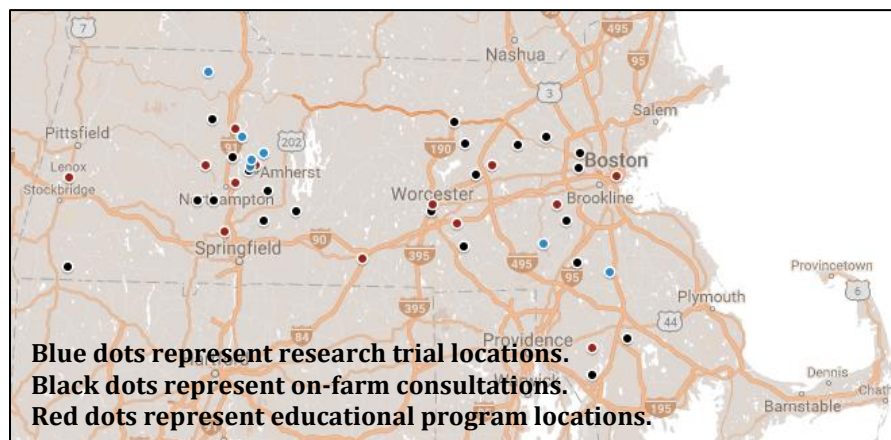
We hosted or presented at 33 educational programs this year from Massachusetts (map) to Indonesia on topics ranging from farmer adaptation strategies to climate change, winter spinach production and disease control, to produce wash station design, use, and maintenance.

We made 130 visits to over 30 farms this year (map) representing over 1,000 acres. With these farmers, we developed 70 integrated crop and pest management strategies, and gave 492 specific recommendations to address their strategies through biweekly farm visits, scouting and technical assistance. Of the practices recommended by the UMass IPM team, 76% were adopted by growers; another 11% were adopted with minor modification

- After working with us for the first year as a mentor in the IPM program, one farmer said: "This year was great. Enjoyed it. Learned a lot. Gave us confidence. You showing up in the spring, taking samples and making recommendations helped get us over the phytium hump. We've been dealing with

the problem for 5 years now! It takes another perspective and someone to run decisions by to make a change."

- We developed 'UMass Vegetable Winter School' to improve the skills of farmers and farm managers in 7 day-long classes covering IPM, Nutrient Management, Food Safety, Employee Management, Grants and Risk Management and Worker Protection Standards. Out of 40 attendees, 3 growers reported career changes and improvements as a result of participating in Winter School.



- 148 Individuals received certified produce safety training and over 300 people received information about how new food safety regulations will be enforced in Massachusetts.

### Research Trials:

Project Director Susan Scheufele:

Location: UMass Crop and Animal Research and Education Center, South Deerfield, MA.

- *Insectary Study for Cabbage Aphid Management in Brussels Sprouts*
- *Alternative Insecticides for Cabbage Aphid Management in Cabbage*
- *Evaluating Varieties for Cucurbit Downy Mildew Resistance and Yield*
- *Economic Analysis of Integrated Management Strategies for Cucurbit Downy Mildew Management*

Project Director Katie Campbell-Nelson:

- *Nitrogen contribution from cover crops for vegetable crop uptake.* Locations: UMass Crop and Animal Research and Education Center, South Deerfield, MA, Tangerini Farm, Millis, MA, Langwater Farm, North Easton, MA, Twin Oaks Farm, Hadley, MA, Lysonsville Farm, Colrain, MA, and Many Hands Farm Corps, Amherst, MA.

### Grants Awarded:

Principle Investigator Katie Campbell-Nelson

- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA) (NESARE), Title: *2018-2020 NESARE MA Professional Development and Outreach Program*, Total Award: \$19,428.00, Expiration: 9/30/2020
- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA) (NESARE), Title: *Nitrogen contribution from cover crops for vegetable crop uptake*, Total Award: \$11,069.00, Expiration: 12/31/2018
- Prime Sponsor: Massachusetts Department of Agricultural Resources (MDAR) Title: *Produce Safety school and Vegetable Winter School*, Total Award: \$19,000, Expiration: 6/30/2017

Principle Investigator Lisa McKeag

- Prime Sponsor: US Dept of Agriculture (USDA) Risk Management Agency (RMA), Title: *UMass Extension Comprehensive Crop Insurance/Risk Management Education Program*, Total Award: \$206,289.00, Expiration: 09/28/2018
- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA), Title: *Expanding Food Safety Education in Massachusetts and Shifting from Voluntary to Regulatory Compliance*, Total Award: \$144,617.00, Expiration: 09/30/2018

Principle Investigator Susan Scheufele:

- Prime Sponsor: US Dept of Agriculture (USDA) Specialty Crops Block Grant, Title: *Increasing Sales, Fruit Quality, and Profitability of Cucurbit Production Through Integrated Disease Management*, Total Award: \$50,003.00 Expiration: 09/30/2018
- Prime Sponsor: Agricultural Research Service (USDA - ARS), Title: *Cucurbit IPM for reducing pollinator exposure to key fungicides*, Total Award: \$23,537.00 Expiration: 12/31/2019
- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA), Title: *Conducting Farmer to Farmer Mentoring to Beginning, Immigrant, & Refugee Farmers in Crop Production & Marketing while Employing the Existing Thirty Year Old Flats Mentoring Model*, Total Award: \$53,883.00 Expiration: 8/31/2018
- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA) (Northeast SARE), Title: *Evaluation of biological fungicides to control diseases of spinach in winter high tunnels*, Total Award: \$14,981.76 Expiration: 4/15/2017

Principle Investigator Hilary Sandler

- Prime Sponsor: Nat'l Institute of Food and Agriculture (NIFA) *Supporting IPM on Diverse Massachusetts Farms through the Integration of Applied Research and Extension Outreach* Total Award: \$857,427.00 Expiration: 8/31/2020

### Collaborations:

- [SARE](#) – Katie Campbell-Nelson serves as state coordinator and helps applicants submit successful grant proposals.
- [MDAR](#) – We worked with MDAR staff to provide educational programming on Nutrient Management and Food Safety.



- [SEMAP](#), [NEVBGA](#), [NRCS](#), [New York State IPM Program](#), [CRAFT](#), [Master Gardeners](#), MA Horticultural Society, [FSA](#), [Stockbridge School of Agriculture](#), eExtension, CISA, Berkshire Grown, Harvest New England, and [NOFA](#) we gave presentations at workshops and conferences hosted by these agricultural organizations at multiple locations around the region.

**Services:** We treated seeds for 10 farms this year from CT, ID, MA, MD and VT through our [Hot Water Seed Treatment](#) service.

**Publications:**

- 24 issues of Vegetable Notes reached 2,791 subscribers with Pest Alerts including data from farms, Extension Educators and IPM scouts in CT, MA, ME, NH, NY, RI, and VT.
- Mckeag, L. and M.B Dicklow Eds, 2017. New England Vegetable Management Guide, 2018-2019 Edition. <https://nevegetable.org/>
- Scheufele, S.B., Teitelbaum, D. and A. Zolondick, 2017. Evaluation of biofungicides for management of seedling diseases in overwintered spinach, 2016. Plant Disease Management Reports. Volume 11: V046.
- Scheufele, S.B., and G. Higgins, 2017. Evaluation of resistant cultivars for management of downy and powdery mildews in Fall cucumbers, 2016. Plant Disease Management Reports. Volume 11: V104.
- Scheufele, S.B., and G. Higgins, 2017. Evaluation of a resistant and susceptible cultivar with or without fungicides for management of downy and powdery mildew in Fall cucumbers, 2016. Plant Disease Management Reports. Volume 11: V116.
- Scheufele, S.B. and G. Higgins, 2017. Evaluation of an OMRI-approved spinosad insecticide for control of cabbage root maggot in direct-seeded root crops, 2016. Arthropod Management Tests. (In Press).

**PHOTOS**



**Katie hiding in one of her on-farm research trials at Langwater Farm in North Easton, MA.**



**Sue counting syrphid flies in her insectary study for managing cabbage aphids in Brussels Sprouts.**



**Lisa hosting an Irrigation and Food Safety Twilight Meeting with Tangerini Farm and Trevor Hardy of Brookdale Fruit Farm in Millis, MA.**



**Lisa, Genevieve, and Michele count aphids and parasitoids on cabbage.**



**Michele and Joe Matuszko of Twin Oaks Farm in Hadley, MA collect data from an on-farm trial.**



**Analisa collects a greenhouse tomato sample for analysis.**