Specialty Crop Block Grant Agreement No. 12-25-B-1702

Final Performance Report to USDA-Agricultural Marketing Service

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Project Reviews

Project 1: Developing a Sustainable Pest Management Program for the Invasive Swede Midge in Brassica Crops – Final Report

PROJECT SUMMARY

Swede midge, Contarinia nasturtii Kieff. (Diptera: Cecidomyiidae) is an invasive pest of Brassica crops (kale, collards, cabbage, broccoli, kohlrabi, Asian greens, Napa cabbage, mustard greens, cauliflower) in the Northeastern US. It was first discovered in North America in 2000 in southern Ontario, Canada (Hallett and Heal 2001), and then spread into New York, Vermont, New Jersey, Massachusetts, Connecticut, and Ohio (Kikkert et al. 2011). Swede midge damage on the leaves, petioles, and meristems of Brassica plants distorts vegetative tissues and prevents proper head formation for heading Brassicas such as broccoli, cauliflower, and cabbage.

Within Vermont, this invasive midge has already affected the economic viability of vegetable producers that are diversified, small, organic, or sequentially-plant their crops. Late planted *Brassica* crops have already resulted in 100% losses, and some growers are concerned about the viability of continued production. There are no effective methods for organic control of swede midge.

PROJECT APPROACH

We have developed a set of candidate plant essential oils, intercrops, and plant elicitors that can be used to manage swede midge pest populations. To complete this project, we started and maintained a swede midge colony and developed research trial protocols. In addition, we gathered baseline survey data on grower perceptions from the Vermont Vegetable & Berry Growers Association (VVBGA). A first set of trials evaluated whether aromatic or crop plants are more effective in reducing midge damage on broccoli using a laboratory midge colony; we found that a subset of the intercropped plants reduce swede midge larval densities. A second set of trials evaluated whether 25–35 plant essential oils are effective in reducing midge damage using a laboratory midge colony; we found that a subset of the plant essential oils reduced midge damage. Lastly, we conducted field trials (NY – NE IPM funds, Intervale Community Farm – SCBGP funds); the field trials did not yield significant results because of low midge pressure at the field site.

Dr. Yolanda Chen oversaw the experimental design, helped with trouble-shooting of the logistics, data analysis, and writing. Dr. Tony Shelton oversaw the field study carried on Year 3. The laboratory research was conducted by Gemelle Brion, a Masters student, and Chase Stratton a Ph. D. candidate. The field research was conducted by Dan Olmstead. Dr. David Conner is helping with the analysis of the economic data, which has been taken over by Elisabeth Hodgdon, a Ph. D. student, supported by other funds.

We found that some intercrops appear to reduce the number of swede midge eggs laid on broccoli plants in caged studies. Prior to developing commercial recommendations, we recommend more extensive field testing to determine if the intercrop plants help to reduce midge larval densities on the target crop, and to understand the agronomic issues associated with intercropping.

We have found plant essential oils that are promising as repellents. Before we recommend that vegetable growers use this as a pest management measure for swede midge, we need to do additional field trials. Among these plant essential oils, garlic appears to be the most promising. We are planning for the field trials this summer.

We found that effective plant essential oils (+ and ++ in *Table 1* below) significantly reduced larval infestation. These project results could be extended to canola, which is also a crop within Brassicaceae, but it would not be cost effective at this point.

GOALS AND OUTCOMES ACHIEVED

Objective 1. Develop a list of recommended exogenous plant substances that reduce swede midge infestation.

After performing no-choice and choice tests for more than 20 essential oils, we feel confident in our recommended list of tactics to repel swede midge and reduce larval infestation. In addition to the lab trials, we also performed a field study on a large farm in Johnson, VT where swede midge populations are established, using the most effective plant extract, garlic. This trial was performed using a randomized block design, with 8 replicates for the treatment and control. Damage measurements were performed on July 22 using the Hallett scale (), and initial results suggest garlic extract has an effect, but not enough to completely protect brassica crops. A second assessment will be performed on August 19th.

While multiple essential oils were found to significantly reduce larval densities, we were concerned about phytotoxic effects. In order to control for phytotoxicity, which could have impacted larval density by alternate mechanisms (e.g. increasing plant defensive response), and focus on olfactory response to non-host chemicals, we performed an additional experiment with essential oil-soaked cotton rolls placed near broccoli plants. These trials provided interesting results. For example, when applied directly to broccoli plants, lemongrass and thyme were found to be highly phytotoxic and repellent, however, when applied using cotton rolls, lemongrass remained repellent while thyme had no effect. Importantly, while garlic was found to be highly repellent when applied directly broccoli plants, with no phytotoxicity, these results were not observed when using cotton rolls. Literature on insect olfaction discusses multiple modes of volatile detection in insects, with antennae being most used in flight, and chemoreceptors on tarsi being used upon contact with the plant. For this reason, the repellent effect of garlic may depend on adult contact. Additionally, direct application of oils could alter the brassica chemical profile to varying degrees, but to confirm this hypothesis, additional tests should be performed.

In order to provide additional measurements to the question of whether phylogenetic distance influences repellency, chemical profiles have been analyzed for each of the essential oils using gas chromatography. Oils that were most effective in the lab trials were also subjected to mass spectrometry to identify the specific chemical components for each odor. These results conclusively show variation in chemical profiles of the plant extracts, and when combined with phylogenetic measurements, provide a powerful approach to answering why particular compounds repel the swede midge.

Performance Measure 1a: Data that shows a 50% or greater reduction larval infestation on plants treated with plant exogenous substances compared to the control.

We found that the effective plant essential oils (+ and ++ in Table 1) that significantly reduced larval infestation.

Performance Measure 1b: Data that shows an increase in broccoli quality within treatments of plant essential oils compared to the control.

We did not specifically measure broccoli quality in the lab assays.

Table 1. Plant essential oils influenced swede midge larval density. We measured larval density on broccoli plants sprayed with different plant essential oils compared to control plants. The column titled "Effective" indicates plant essential oils that significantly reduced larval density (+ or ++), did not influence larval density (~), or increased larval density (-).

Oil	Phytotoxic?	Effective (No Choice)	Effective (Choice)	Effective (Cotton)
Peppermint	+	++	++	NA
Marjoram Sweet	~	-	+	NA
Wormwood	~	-	-	NA
Wintergreen	~	~+	~-	NA
Thyme	++	++	++	--
Caraway	+	--	NA	NA
Eucalyptus	-	--	~-/NA	NA
Anise Star	++	-	~+	NA
Oregano	++	++	++	-
Spearmint	+	++	++	NA
Eucalyptus Lemon	-	+/NA	++	NA
Lemongrass	+	+++	+	+++

Cinnamon Bark	+	+	~+	+
Garlic	-	++	++	-

Objective 2. Develop a list of recommended non-host intercrops that reduce swede midge infestation.

The experimental portion of the intercrop study was completed in October 2014 and a paper that will be submitted for publication is currently being prepared. Twenty plants were selected for inclusion in a study testing their repellent effect on swede midge in a simulated intercropping system. We selected intercrop plants that would be tested for their ability to repel C. nasturtii from ovipositing on their host plant in a simulated intercropping system if: 1) the plant produces substances that are known to cause high rates of repellency in Cecidomyiidae species or 2) the plant has been shown to successfully deter insects that specialize on Brassica spp. in previous intercropping studies. From the generated list of greater than fifty plant species, plants were selected that vary in their height, vegetation type, and phylogenetic distance.

Plants were transplanted into Panterra Oval Planters (13 5/8" x 6 5/8" x 5", Greenhouse Megastore), containing Moo Mix soil media, which simulated an intercrop or a monocrop situation. Oval pots were planted with three B. oleracea plants, evenly spaced through the midline of the long edge of the pot, to simulate a monocrop situation. To simulate an intercrop system, two B. oleracea plants were planted at the farthest ends of the long edge of the oval pot and non-host intercrops were planted in the center of the pot, between the two B. oleracea plants. Plants were allowed to grow together in the simulated intercrop combination for four weeks to allow for root interaction between host plant and nonhost plant.

At the specified level of growth, plants in oval pots were placed in the center of insect rearing and observation cages (13" x 13" x 17", Bioquip), which are collapsible boxes composed of a fine insect netting on five sides and one plastic observation window.

Four male and four female C. nasturtii were collected with mouth aspirators from a colony being reared by the Insect Agroecology Lab at the University of Vermont and were released into the plant-filled observation cages. Released C. nasturtii remained in the observation cages with the plants for three days. Following the three-day exposure, plants were taken to growth chambers for a total of ten days. At the end of the ten day period, plants were visually inspected for swede midge larvae and larval counts were performed.

Larval abundance on *B. oleracea* varied significantly between all treatments ($p<0.001$). Therefore, non-host plants planted in close proximity to the host plant affected larval densities of *C. nasturtii* in a simulated intercropping experiment. Additionally, the means of larvae counts on *B. oleracea* for seven of the intercrop treatments were significantly different from the control treatment. The mean of the *Salvia officianalis* treatment was significantly higher than the control mean ($p<0.001$) while the *Iberis umbellata* ($p=0.031$), *Petroselinum crispum* ($p=0.007$), *Chamaemelum nobile* ($p=0.004$), *Fagopyrem esculentum* ($p=0.004$), *Lobularia maritima* ($p<0.001$), and *Nigella damascena* ($p<0.001$) treatments had larval means that were significantly lower than the control mean.

Vegetation type of the intercrop species significantly influenced larval abundance on the host plant in our study ($p<0.001$). *B. oleracea* planted next to groundcover vegetation type had the lowest mean larval abundance ($\mu=1.53$), followed by vegetable intercrop treatments ($\mu=2.93$) and the highest larval abundance was on host plants in herb

intercrop treatments (μ=3.05). Vegetation type was shown to be associated with larval abundance in our study and groundcover had significantly lower larval abundance than vegetables and herbs.

Field trials using 6 intercrop species are currently being performed at Cornell's Field Station in Geneva. Each experimental replicate contains 4 broccoli plants, with intercrops on either side. *Lobularia maritima*, *Ocimum basilicum*, *Fagopyrum esculentum*, *Iberis umbellate*, *Nigella damascene*, and *Petroselinium crispun* are spaced according to growing recommendations on either side of experimental broccoli plants in a randomized block design. A total of 7 replicates are being used for each intercropping treatment.

Damage ratings will be assessed 3 and 6 weeks after trasnsplanting using the Hallett Scale.

In addition, 3 of the 6 most successful intercrops were used for field trials starting July 2015. Alyssum and nigella are being used in a small-scale randomized garden experiment, with fake plants included in the control, and buckwheat is being used in a larger scale experiment on a local farm. Broccoli is being used as the crop in either experiment. In the garden study, height measurements are being taken every two weeks for both the broccoli and intercrop plants, head diameter and SPAD meter readings are being measured for the broccoli, and damage is being assessed using the Hallett Scale. The SPAD readings allow us to extrapolate relative levels of nitrogen in the broccoli, and can be used to measure degrees of competition occurring between intercrops and crops. In the larger study at the ICF, damage is also measured using the Hallett Scale, and at the end of both experiments, average yield per plot will be determined to contribute to the final economic analyses.

Performance Measure 2a: Data that shows lower larval infestation on plants treated with the intercrops compared to the control.

We found that the species of the intercrop plant influenced larval density. Broccoli plants next to Alyssum and Nigella had significantly lower larval density compared to the control.

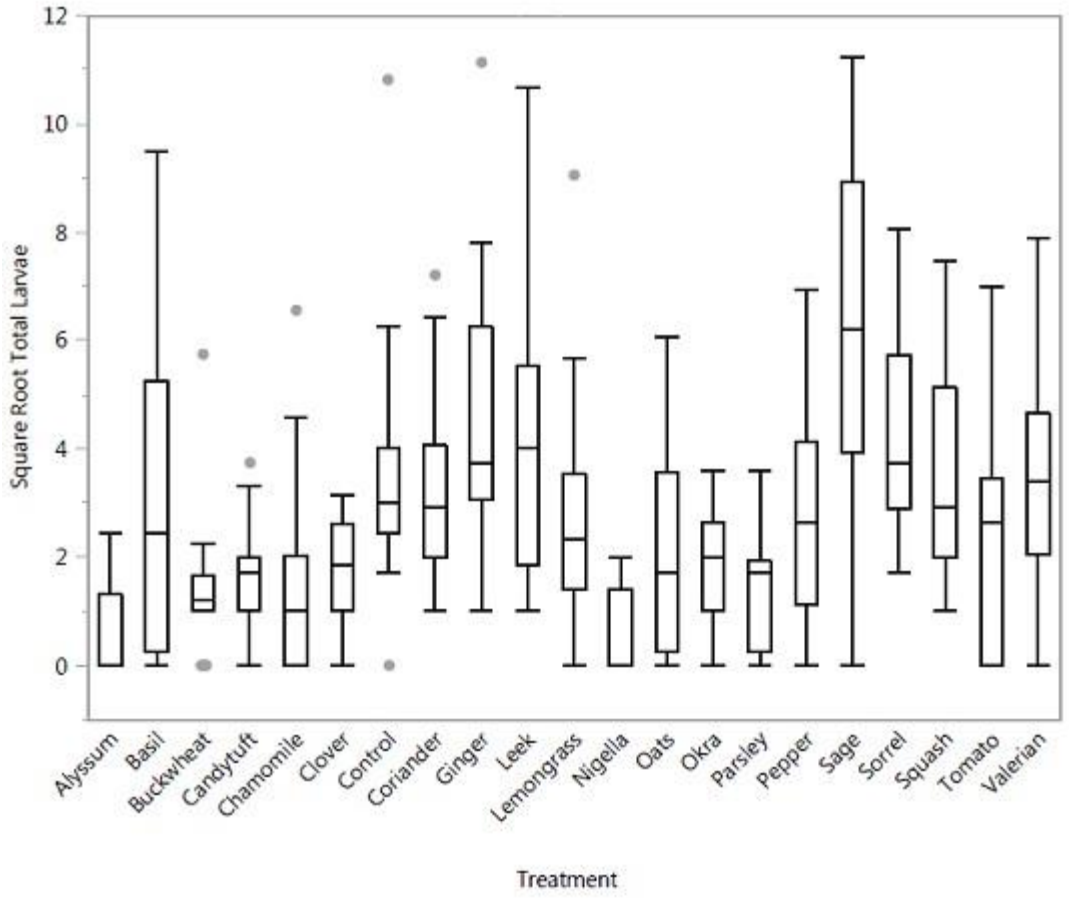

Figure 1. Larval density on broccoli plants varied based upon the intercropped plant species.

Objective 3. Determine the economics of candidate plant repellents and intercrops

Costs associated with each of the treatment approaches have been entered into a spreadsheet and are currently being analyzed. The following function will be used for this assessment:

$$E(\pi_i) = P * E(yield_i) - \sum Costs_i$$

Where E is the expected value, π is the profit (dollars/acre, revenue minus costs per acre) for each of the *i* treatments and control, P is the price per pound of the marketable yield, yield is the expected yield from each treatment and control, and costs are input, labor, and other associated costs with the treatment.

We are currently calculating input costs to identify how they are affected compared to the control.

Objective 4. Evaluate the likelihood of grower adoption of alternative pest management strategies

In order to determine the likelihood of grower adoption of these practices, a survey was sent out to listservs that extend throughout the Northeast. More than 120 vegetable growers responded to the survey, providing insight as

to how well information on swede midge has been distributed. The results indicate that growers in New York and Vermont, the current epicenters of swede midge in the United States, are more interested in the development of new management strategies.

Results from all lab and field trials have been reported in multiple magazines, journals, and newspapers, including "Seven Days," "Green Mountain," "Burlington Free Press", and the channel 3 news WCAX. We have also been working with Tony Lehouillier and Andy Jones, who own and operate Foot Brook Farm and the Intervale Community Farm, respectively. Results from the first round of essential oil trials were presented at the 2014 Entomological Society of America national conference, and will again be reported with all additional findings at this year's conference. In addition, all lab trials were presented at the 2014 and 2017 NOFA Vermont conference at UVM.

BENEFICIARIES

Vegetable growers in Northern Vermont have reported increasing pressure from swede midge. This study identified a list of candidate management measures that could be effective in the field. One farmer, Tony Lehouillier has been trialing some of the candidate materials in his field.

The majority of vegetable growers in Vermont grow brassica crops on the farm. The results from this project will benefit growers that raise brassica growers.

LESSONS LEARNED

We have learned that plant essential oils vary in their efficacy in altering swede midge larval densities on broccoli plants. At this point, we are unsure of how essential oils work, whether the odors directly repel females, cause swede midge females to reject host plants, or are directly toxic to larvae.

We have begun field trials on the efficacy of these materials in the field, and we have realized that the lab results are not always directly effective in the field.

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ADDITIONAL INFORMATION

Informational site on swede midge: http://blog.uvm.edu/yfanslow/our-work-on-swede-midge/

Project 2: The Vermont CSA Network Project – Final Report

PROJECT SUMMARY

Given the growth in consumer demand for local food, this project had two main goals increase the viability of Community Supported Agriculture (CSA) farms in Vermont: to create a learning community among CSA farmers, and to educate consumers about the benefits of CSAs. Through the creation of a learning community among CSA farmers, NOFA-VT provided resources and peer-to-peer learning opportunities on CSA topics such as how to marketing farms unique attributes and CSA customer retention. This project also educated consumers about the benefits of CSA, with the objective of increasing the number of new, and the retention of existing, CSA members. These objectives were met through statewide CSA marketing, organizing consumer outreach events to promote CSA, and promoting a CSA learning community through both an online forum and a CSA track at NOFA-VT's annual Direct Marketing Conference.

PROJECT APPROACH

We began broad discussion about the CSA Network at NOFA-VT's January 2014 Direct Marketing Conference. At this conference, we hosted a networking session of interested CSA farmers to provide input on the developing Network as well as share best practices with other CSA farmers. Representatives of CSA Networks from other regions were unable to attend, but NOFA-VT staff presented information on their different models.

The primary focus of existing CSA Networks we reported on (e.g. Equiterre in Montreal) is to connect a large population of urban consumers to rural farms. Because the farms are often not located in close proximity to their consumers, the Networks promote the CSA model and help the farms find consumers, and the farmers are therefore willing to pay the Network for this service. Unlike Vermont, the target audience of these Networks is located in a relatively small geographic area in or around an urban center which makes outreach easier. The Networks can host a few big CSA fairs or table at events, reaching tens of thousands of people easily. Even outreach in one targeted neighborhood can result in the network reaching thousands of consumers. Because of the low population density in Vermont, the number of events needed to reach enough consumers across the state and the subsequent cost to host/attend the events would be cost prohibitive, and because of this, we determined that this model would not be practical in Vermont.

Instead, the farmers directed NOFA to focus much of the marketing for this grant on consumer outreach events (i.e. developing an Open CSA Farm Day, socials on CSA farms), while also providing learning opportunities for CSA farmers to broaden their marketing and CSA-specific skills through workshops and peer-to-peer networking/learning exchanges. The farmers present at this networking session also determined that rather than hold focus groups, subsequent feedback could be gleaned through the use of the new CSA Network listserv or through direct emails/phone calls to the most engaged CSA farmers.

To access the benefits of the CSA Network, CSA farmers providing feedback, as well as the farmers on NOFA-VT's board of directors, determined that there would not be a separate membership fee at this time for the CSA Network but that network participants could either be CSA farms certified organic by VOF or members of NOFA-VT. Benefits of participation in our CSA Network include: a detailed listing on our CSA online directory, the ability to participate in our 2014 Open CSA Farm Day and the subsequent promotions of CSA farms participating in the 2015 Open Farm Week, access to the CSA listserv, the ability to participate in the NOFA-VT Farm Share Program, and, if NOFA-VT members, discounts to workshops and conferences.

Below is a bulleted list of updates on the project's activities:

- Learning Opportunities for CSA Farmers
    - 2014 Direct Marketing Conference (DMC): In addition to the networking session described above, there were several workshops at the DMC to support the needs of CSA farmers. The topics of these workshops were identified in part through NOFA-VT's annual CSA survey as well as the recommendations from several engaged CSA farmers. The workshops were:
        - Free Choice CSAs: Who They Work For and Why
        - Best Practices in Marketing Workplace CSA Delivery
        - Assessing the Cost of Your Direct Markets
        - Is Growing for Winter Direct Markets Right for You?
        - Reaching Markets Outside of the State
        - Value-Added Products: What You Need to Know About Food Safety!
        - Tools and Strategies for Successful Online Marketing

    - The 2014 Summer Workshop Series had four workshops developed to meet the needs identified through the annual CSA Survey and by surveying members through the CSA listserv. The following workshops were attended by a total of 72 participants:
        - Profitable Small Acreage Production at High Ledge Farm in South Woodbury
        - Pest & Disease ID and Scouting at High Meadows Farm in Westminster
        - Tractors, Tools and Tricks for Mechanical Cultivation at the Intervale in Burlington
        - Behind the Scenes at Kilpatrick Family Farm in Middle Granville, NY

    - Direct Marketing Track at the February 2015 Winter Conference: In 2015, we made a change to incorporating a direct marketing track into the Winter Conference rather than holding a separate Direct Marketing Conference. The primary reason was so direct market farmers could attend just one conference with a wider variety of topics relevant to them in the winter, rather than two (or having to choose between the Winter and Direct Marketing Conferences). This idea was met with enthusiasm and we believe it was successful based on the number of attendees and workshop evaluations. The workshops that were organized for CSA farmers as part of the direct marketing track were informed by farmer feedback in the annual CSA Survey. The workshops were:
        - Best Practices for Opening Your Farm to Visitors – we did not capture evaluations for this workshop.
        - CSAs & Community Engagement – 24 attendees, 48% rated it excellent, 52% rated it good
        - What Makes Your Farm Business Unique: How to Identify & Promote Your Attributes - 27 attendees, 41% rated it excellent, 59% rated it good
        - Managing & Marketing A Year-Round Diversified CSA - 32 attendees, 64% rated it excellent, 36% rated it good
        - In addition to the workshops, we hosted a day-long intensive workshop with Jean-Martin Fortier from Quebec called "Six Figure Farming for Small Plots." Farming on small acreage was a consistent topic identified in the annual CSA survey. In his workshop, Jean-Martin shared his CSA model with attendees, and details about the financial viability of his model. The intensive had 49 attendees, 94% rated the topic and presenter as excellent.

    - The 2015 Summer Workshop Series had four workshops developed to meet the needs of CSA farmers:
        - Keeping Old Tractors Alive and Well (18 attendees)
        - Pest & Disease ID and Scouting (8 attendees)
        - A Value-Added Processing Facility Tour (11 attendees)
        - Tunnel Vegetable Production (11 attendees)

- Direct Marketing Track at the February 2016 Winter Conference:
  - How to Engage Shareholders in your CSA – 23 attendees, 71% rated it excellent, 29% rated it fair
  - Developing Your Farm Brand: How to Identify Your Unique Attributes - 69% rated it excellent, 23% rated it fair, and 8% rated it poor
  - Sustainable Marketing for Sustainable Farms - 29 attendees, 63% rated it excellent, 37% rated it fair

- CSA Listserv: In January 2014, we created a CSA Network Listserv. Initially, the listserv had over 100 CSA farm members, yet despite the fact that in 2013, 78% (57 of 73) of CSA Survey respondents said they would be interested in a CSA online forum, the farmer participation in the listserv never took off. We attribute the lack of participation on this CSA listserv to be directly related to farmer adoption of the VVBGA listserv. As farmers began utilizing the VVBGA listserv for more and more of their questions (both CSA and other farm topic related), utilizing just one forum for all farm related questions rather than having a separate listserv for specific CSA questions was easier for farms to adopt. CSA topics have been regularly posted on the VVBGA listserv and this all-in-one farmer listserv has streamlined farmers' ability to get peer-to-peer feedback on many farm related topics.

- Annual CSA Survey: The 2013 CSA Survey was completed in early 2014 and the 2014 CSA Survey was completed in early 2015. The 2015 CSA Survey was completed in the first quarter of 2016 and will be analyzed in quarter two of 2016. This survey provides data on the respective seasons and is one way that NOFA-VT identifies areas of need for CSA farmers.

  We had an unusually low response rate to the 2014 Annual CSA Survey. This made analyzing the trends in CSAs challenging. We heard from farmers that the length of the survey was a challenge and for the 2015 Annual CSA Survey, we significantly shortened the survey in the hopes that that would encourage more CSA producers to complete the survey. We also partnered with the VAAFM to co-promote the survey – hoping that increased outreach to CSA farmers to complete the survey would increase the response rate. As of this writing, for the 2015 CSA Survey, we have again seen a similarly low response rate. Moving forward with our work to support CSAs, we believe we need to develop other methods to analyze CSA trends. In addition to working with VAAFM and Farm to Plate in 2016 to analyze the survey questions we are asking, we will also discuss how to best analyze, use and promote the data we are receiving, and in a future grant, we anticipate working directly with farmers to help them get more out of the data they are providing by helping them analyze it in order to inform more enterprise decisions for the CSA aspect of their businesses.

- Consumer Outreach & Promotions:
  - Web-based CSA Outreach: Throughout this project, NOFA-VT has consistently updated our online CSA directory. In late 2015, NOFA-VT revamped our website (http://nofavt.org/programs/farm-consumer-0/local-food-buyers) and made our CSA Directory (http://nofavt.org/find-organic-local-food/csas) more easily searchable to help consumers find CSA farms by specific attributes such as products they have available, seasons they offer a CSA, and county location. The new CSA listing also includes a map, so that consumers can easily view the location of the farm. Throughout this project, CSA farm directory listings have also been shared consistently with the Vermont Agency of Agriculture to include in their CSA promotions.
  - Open CSA Farm Day: Over 50 farms from around the state participated in the 2014 Open CSA Farm Day. Farms were provided with a poster to promote the event in their community and several ready-to-use descriptive blurbs to share via their websites, newsletters or social media. In addition, we created multiple statewide press releases, and posters for the event were shared

with over 70 community partners around the state (i.e. Co-ops, regional organizations, etc.) to help raise awareness. While the weather that day was rainy and cold resulting in some farms having few to no participants (while others had up to 60), 100% of the farms responding to the post-event survey stated they wanted NOFA-VT to organize another Open CSA Farm Day in 2015. Many CSAs responding to the survey noted that while having an event at the beginning of the season is good because it might bring a few new sign-ups, there is too much risk for a bad weather day, and not very much growing on the farm that would be a consumer draw. An event later in the season was preferable to many so that people would be able to see what the farm looks like at peak, with the hope that they will sign-up in advance for a CSA during the next season. As a result of this feedback, Open Farm Day 2015 was held in August rather than May.

- The following 2014 CSA on-farm socials were attended by a total of 241 consumers:
    - Joe's Brook Farm in St. Johnsbury
    - Blue Heron Farm in Grand Isle
    - Gildrien Farm in Leicester
    - Walker Farm in Dummerston

- In 2015, we developed resources that could be used at events to promote CSAs. These materials include a "Why Buy Direct" brochure that outlines the benefits of buying directly from farmers and highlights CSAs, and a series of handouts that have all the direct market farms (including CSAs) and farmers markets by county. These materials were used at NOFA events and distributed by our Farm to Community mentors who are tabling around the state to promote agricultural literacy and consumer awareness. Promoting direct markets, including CSAs, has been a focus of our Farm to Community mentors in 2015. In 2015 and the first quarter of 2016, the mentors have done approximately 100 events that focused on direct markets, including promoting CSAs, reaching nearly 6000 people!

- Building on the success of our 2014 Open CSA Day, we partnered with several organizations (Shelburne Farms, Vermont Fresh Network/DigInVT, The Vermont Agency of Agriculture, The VT Dept. for Travel and Tourism, Neighboring Food Coops Association, etc.) to organize Vermont's first annual Open Farm Week (OFW). NOFA-VT focused support on direct market farms during this week. Over 80 farms participated in Open Farm Week (OFW) in total, with 29 participants offering CSAs. When surveyed, 93% of the responding participants wanted us to organize OFW again in 2016; 87% of responding farms said OFW was helpful in attracting new customers; 67% said it was helpful to increasing their sales; and 91% said it was helpful to educating customers about farms and food.

- The following 2015 CSA on-farm socials were attended by a total of 213 consumers:
    - Earth Sky Time Farm in Dorset
    - Golden Russet Farm in Shoreham
    - Berry Creek Farm in Westfield

- Pricing Study: Over the 2014 summer, we piloted a pricing study on seven CSA farms in northern and central Vermont to collect economic data evaluating the cost of specialty crops to consumers, in comparison with other retail grocery stores. We had an intern who was working on her Master's degree lead this project, with the hopes of developing a methodology to expand this pricing study statewide in the future. Her analysis suggested that the organic CSAs in this study were less expensive than the equivalent products at a grocery store but the products at the CSA farms managed with conventional agricultural practices were more expensive. In the summer of 2016, we are collaborating with the VAAFM to conduct a larger study encompassing a broader statewide geographic diversity of CSAs and with more data collection periods to better represent the entire growing season.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.

We identified that the development of a CSA Network and broad consumer outreach to market the value of CSA would enhance the competitiveness of both specialty crops and non-specialty crops. In early 2013, 79 Vermont CSAs responded to a questionnaire, and approximately half of those have diversified production and/or are distributing both produce and livestock or grains to their members. Only four of the 79 farms offered meat only to their CSA members. We determined that of the CSAs that are diversified, at least half of their sales are specialty crops. Therefore, due to our estimate that 25% of the production and sales on CSA farms are not specialty crops, we provided 25% match to the budget to cover the cost of increasing the competitiveness of non-specialty crops. This rationale and percentage was approved in our project proposal to the VAAFM.

GOALS AND OUTCOMES ACHIEVED

The activities that were completed (more detail above) in order to achieve the expected measurable outcomes were:

- Learning Opportunities for CSA Farmers
- CSA Listserv
- Annual CSA Survey
- Consumer Outreach & Promotions
- Pricing Study

In this project, we proposed two measurable outcomes. The outcomes as well as the progress made towards achievement are outlined below.

Outcome 1: The first objective of this project is to reach new consumer audiences to increase the number of specialty crop CSA shares, thereby increasing on-farm gross sales. Based on our most recent 2013 CSA survey (based on 2012 data), there are 79 CSA farms with more than 6,671 members. Our target is to increase the total number of shares by 10%. We will measure this goal by an annual survey to all farms in the CSA Network.

In 2013, 79 CSA farms answered our 2012 CSA Survey. Of those, 71 provided information about the number of shares they had in 2012. The 71 responding CSA farms reported 6,671 shares – an average of 94 shares per farm.

In 2016 –46 CSA farms answered our 2015 CSA Survey. Of those, 40 provided information about the number of shares they had in 2015. The 40 responding CSA farms reported 4,681 shares – an average of 117 shares per farm.

In order to compare the number of shares before the grant and after the grant given that the number of CSA farms providing their share data, we compared the average number of shares per farm. The average number of shares per farm increased from 94 to 117 – **a 24.4% increase.**

Outcome 2: A second objective of this project is to create a CSA Network in Vermont that will serve as a learning community of CSA farmers. There is currently not a formal CSA Network in Vermont. This objective will be measured by the number of CSAs joining the network, with a target of ½ of the CSAs in year 1 and 2/3 of the CSAs by the end of year 2.

As we spent more time researching other CSA Networks and talking with CSA farmers in Vermont, we realized that while there was great enthusiasm and support for the constituent parts of this project, developing a formalized CSA Network with dues-paying members was not going to work at this time in Vermont. The other

CSA Networks primarily justify the cost to members because the farms are often not located in close proximity to their consumers, so the Networks support them to find consumers. In Vermont, while CSA farmers highly value NOFA-VT's statewide CSA promotions and would like us to do more, they must reserve the bulk of their marketing budget (if they even have one) to reach out to the people in their surrounding communities who may become shareholders. While NOFA-VT can increase consumer awareness and direct consumers to farms statewide, we are not able to do outreach for specific farms in all the communities where the CSA farms are located statewide.

Rather than having network membership, it was decided that to access CSA benefits through this project, farms must either be certified organic by Vermont Organic Farmers or become members of NOFA-VT. Benefits include: a detailed listing on our CSA online directory, the ability to participate in our 2014 Open CSA Farm Day and subsequent promotions of CSA farms participating in the 2015 Open Farm Week, access to the CSA listserv (initially, now no longer), the ability to participate in the NOFA-VT Farm Share Program, and NOFA-VT members receive discounts to workshops and conferences.

A secondary performance measure is: when surveyed annually, the farmers will say that they have learned at least two new production or marketing practices through the Network that have improved their CSA.

- 94% of respondents to the 2014 Direct Marketing Conference evaluation stated that they learned new techniques at the conference they will use on their farms or in their work with farmers.
- 60% % of the respondents to the 2014 CSA Survey stated that they learned new production or marketing practices that have improved their CSAs as a result of activities related to this project.
- 100% of the respondents to the 2015 CSA Survey stated that they learned new production or marketing practices that have improved their CSAs as a result of activities related to this project.

BENEFICIARIES

While we have numbers of farmers who attended specific workshops and participated in each of our consumer outreach events, we do not have one consolidated (non-duplicated) list of all the farms that have participated. Given the high number of farms that attended our 2014 Direct Marketing Conference, direct marketing track at the 2015 and 2016 Winter Conferences, our summer workshops, and participated in Open CSA Farm Day and Open Farm Week, we can conservatively estimate that over 100 CSA farmers have benefitted from this project's accomplishments.

Measuring the specific economic impact is challenging, but in 2012, the total value of sales reported on the CSA Survey by 64 farms was $2,389,613, for an average of $37,337/farm. Comparatively, in 2015, the total value of sales reported on the CSA Survey by 36 farms was $1,768,567, for an average of $49,123/farm. While this looks like the economics of CSA farms are increasing, given that the same exact farms did not respond to both the before and after project surveys, it's not a direct comparison of how things have changed economically. Another marker of the potential economic impact of this project comes from the survey responses of farms that participated in the 2015 Open Farm Week - 87% of responding farms said Open Farm Week was helpful in attracting new customers and 67% said it was helpful to increasing their sales.

LESSONS LEARNED

While the economic trends from the annual CSA Surveys indicate an increasing value of CSAs, we still hear questions from both farms and service providers alike about the strength and relevancy of CSAs as a business

model given changes in the availability of locally grown foods over the past decade. In order to answer these questions and provide continued support to CSA farms, we see the need for a more intensive research and resource development phase. There is a need for research on the CSA market channel to understand CSA trends and evaluate different CSA models, along with in-depth cost of marketing and distribution analysis on several CSA farms, in order to develop educational resources and courses to support CSA farmers to make business decisions that enhance their marketing and farm profitability.

CONTACT PERSON

Erin Buckwalter, NOFA-VT Market Development Director - 802-434-4122 - erin@nofavt.org

ADDITIONAL INFORMATION

NOFA-VT CSA Directory: http://nofavt.org/find-organic-local-food/csas

NOFA-VT CSA Page for Consumers: http://nofavt.org/programs/farm-consumer-0/local-food-buyers/community-supported-agriculture-csa

2016 Winter Conference Website: http://nofavt.org/events/annual-nofa-vt-events/winter-conference-2016

Attached, please find the following:

- 2014 Direct Marketing Conference Brochure (below)
- 2015 Winter Conference Brochure (available at https://issuu.com/nofavt/docs/wc15-brochure12-16)
- 2014, 2015, and 2016 CSA Surveys (below)
- 2013 and 2014 CSA Report (below)
- Buy Direct Brochure (below)
- Addison County flyer as an example of the county by county direct market handouts we made in the summer of 2015 for raising awareness about CSAs and other direct market outlets for consumer events (below)
- 2014 Open CSA Day Poster & Press Releases (below)
- 2015 Open Farm Week Press Release (below)

THE 9TH ANNUAL DIRECT MARKETING CONFERENCE

FarmsTED Speakers

Inspired by the TEDTalks format of brief but excellent presentations on "ideas worth spreading," we're excited to present this series of dynamic and motivating presentations from three local direct marketing experts. (Learn more about TEDTalks at ted.com.)

Richard Berkfield
Building a truly community-based food system requires engaging people from all backgrounds and income levels. Richard Berkfield will share lessons learned from six years of work with Post Oil Solutions and Food Connects to reach limited-income consumers.

Mari Omland
A specific blend of values keeps the Green Mountain Girls Farm focused and helps their team make sense of a small but intricate family of farm-based enterprises. Mari Omland will share how their complex "quintuple bottom line" adds focus to their business, and how their free-choice farm-share increases customization to engage customers interested in total value, not lowest price. As active co-creators of a healthier food system, she asks, are farmers and customers bearing a balanced load?

Eric Rozendaal
After 18 years of farming in Vermont, Eric Rozendaal was able to move his farm from break-even to profitable by becoming a vendor at the Smorgasburg markets in NYC. The farm travels to the big city every week of the year, selling an eclectic mix of maple lemonade, butternut squash donuts, gorditas and egg shares to the eager masses in Brooklyn. Eric will share his improbable tale that began with raising pigs.

Darlene Wolnik – moderator
Darlene Wolnik has spent her adult life as a community organizer and "retail anthropologist." Her work has ranged widely: designing and managing varied retail stores, assisting with neighborhood through statewide consumer and environmental campaigns, and researching and training public markets and food systems organizations.

DMC Registration Form

$40 for NOFA members, $50 for non-members. Refreshments and lunch are included with preregistration.

Register online or postmark by January 4.

PLEASE NOTE: Market Organizer Track attendees must register online or by phone; please do not use this form.

Walk-ins are welcome on the day of the conference; however, preregistration is required to guarantee lunch.

Name(s) of Attendees: _____
Farm/Business: _____
Address: _____
_____
Email: _____
Phone: _____
Number of Attendees: _____ x $40/$50 = **Total:** _____

Dietary Restrictions: _____

Please send checks made out to NOFA Vermont to:
NOFA Vermont Direct Marketing Conference
PO Box 697, Richmond, VT 05477

☎ ***Register by phone: 802-434-4122***
Register online: www.nofavt.org/dmc

THANKS TO OUR SUPPORTERS!

- Castanea Foundation
- Center for Agriculture & Food Systems, Vermont Law School
- Forrest and Frances Lattner Foundation
- Newman's Own Foundation
- Northeast SARE (Sustainable Agriculture Research and Education Program)
- USDA AMS Farmers' Market Promotion Program
- USDA Beginning Farmer & Rancher and Development Program
- Vermont Agency of Agriculture, Food and Markets and the Working Lands Enterprise Board
- Vermont Agency of Agriculture, Food, and Markets: Vermont Specialty Crop Block Grant

Please visit www.nofavt.org/dmc for a complete listing of workshops, presenter bios, and to register online!

NOFA Vermont
PO Box 697
Richmond, VT
05477

Each VTFMA-member farmers' market can send one representative FREE! Pre-register online or by phone to receive free admission.

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NOFA Vermont's 9th Annual

Direct Marketing Conference

Sunday, January 12, 2014
Vermont Law School
South Royalton, VT

THE 9TH ANNUAL DIRECT MARKETING CONFERENCE

Direct marketing is a cornerstone of the thriving culture of local food and agriculture in Vermont. This one-day conference offers a wealth of learning and networking opportunities to farmers who market directly to consumers through farmers' markets, CSAs, and farm stands. New this year, farmers' market organizers and managers can attend a dedicated track (see right).

Main Conference Schedule

8:30 – 9:00: Registration /check-in
9:00 – 10:00: FarmsTED Speakers (see back for details)
10:10–11:25: Workshop Session I & Coaching Sessions
11:35–12:45: Networking Sessions
12:45–1:45: Local Lunch
2:00–3:15: Workshop Session II & Coaching Sessions
3:25– 4:40: Workshop Session III & Coaching Sessions

New Farmer Coaching Sessions

Are you ready to take your farm plans to the next level?

Create a goals-based farm business strategy with the help of a one-on-one session with a new farmer coach. Only seven sessions are available; preregistration is required. Sign up when you preregister for the conference online, by emailing newfarmer@uvm.edu or by calling 802-223-2389 x 203.

Networking Sessions

CSA NETWORK: NOFA-VT is building a new CSA Network to promote and support CSAs statewide. Join us for our first meeting of this new Network to share best practices with other CSA farmers and offer suggestions to NOFA-VT staff about our work over the next year.

DIRECT MARKETING: Alison Kosakowski of the Vermont Agency of Agriculture, Food, & Markets will facilitate a networking session where you can share direct marketing challenges and successes with fellow farmers.

Online Marketing Coaching Sessions

Do you have questions about online marketing?

One-on-one sessions with a marketing professional will help you troubleshoot issues with your current on-line marketing strategy or create new solutions. We'll have a computer or bring your own. Register for a session when you arrive at the conference.

WORKSHOP TITLE	PRESENTERS
Farm Stands: The 7-11 of Vegetable Marketing	Jack Manix & Scott Woosley
Farm Fresh Meat	Andrea Stander & Carl Russell
Value-Added Products: What You Need to Know About Food Safety!	Connor Gorham, George Keener, & Heidi Krantz
Reaching Markets Outside of the State	Eric Rozendaal, Greg Georgaklis, & Amanda Andrews
Assessing the Cost of Your Direct Markets	Matt LaRoux
Is Growing for Winter Direct Markets Right for You?	Jack Manix & David Zuckerman
Best Practices in Marketing Workplace Delivery	Sona Desai, Bill Half, & Jennifer Blackwell
Free Choice CSAs: Who They Work For and Why	Lisa MacDougall & Mari Omland
EBT Basics and Food Access on Your Farm	Daniel McDevitt, Faye Conte & Michael Good
Engaging All Community Members in Direct Markets	Richard Berkfield, Helen Rortvedt, Katherine Sims, & Meghan Stotko
How Do I Sell Through a Distributor?	Sean Buchanan
Selling Produce to a Co-Op: What You Need to Know	Spencer Blackwell, Kira Winslow, & Mary Manghis
Marketing Farm Experience to Increase Product Sales	Lisa Chase, Cat Buxton, Kim Goodling, & Vera Simon-Nobes
Tools and Strategies for Successful Online Marketing	Bekah Mandell & Julie Winn
Strategic Marketing Planning for Livestock Producers	Matt LaRoux
Developing and Communicating Your Story	Alison Kosakowski

Find full workshop descriptions and presenter bios at www.nofavt.org/DMC.

NEW THIS YEAR: MARKET ORGANIZER TRACK

This track for market managers and organizers features longer, small-group working sessions where participants will work through a workbook or other materials to find solutions and build resources for their farmers' market.

Market Organizer Schedule

8:30 – 9:00: Registration/check-in
9:00 – 10:00: FarmsTED Speakers (see back for details)
10:10–12:25: Working Session I
12:30–1:00: Grab lunch & head to....
1:00-2:00: VTFMA Annual Meeting
2:10-4:25: Working Session II

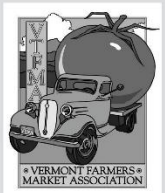
PLEASE NOTE: Workshop space in the Market Organizer Track is limited and pre-registration is required for each workshop.

Please pre-register online www.nofavt.org/dmc or by calling 802-434-4122. Do not register for this track by mail.

Vermont Farmers' Market Association (VTFMA) Annual Meeting

Every VTMFA-member farmers' market is invited to send a voting representative to the annual VTFMA meeting to learn of 2013 accomplishments, the 2014 work plan, and important updates that will affect markets statewide.

While only one representative from each market may vote, the meeting is open to everyone interested in farmers' markets.



SESSION TITLE	PRESENTERS	DESCRIPTION
Building High-Impact Board Teams: Leadership Skills that Make The Difference	Lizann Peyton, organization development and capacity-building consultant	Governing boards require strong teamwork, leadership, and communication, and yet the very dynamics of board work often pull in the opposite direction. This workshop will provide practical take-home skills and visual frameworks for clarifying board-staff roles and responsibilities, building teamwork that focuses on the value that boards add best, framing productive meetings and committee processes, recruiting and orienting new members who will bring skills and energy to the board, and helping the board feel more comfortable talking about finances and fundraising.
Marketing Tools, Best Practices, & Guidelines for Better Organizing & Promoting Farmers' Markets	Pam Knights, Marketing communications consultant specializing in culinary, hospitality, agritourism and small business marketing.	This working session focuses on the basics of marketing and the use of diverse tools to better organize and promote markets to vendors and customers. Learn more about branding, messaging, and the use of print, websites, and social media to communicate your objectives, as well as organizational tools and timelines. Discuss ways to better define and communicate best practices, market policies, and vendor guidelines for a more efficient market. In addition, a small panel of market managers will talk about the marketing and organizational tools they use. Bring your business cards, market materials, marketing ideas, successes and challenges to share with the group.
Making the Case for Your Market in Your Community	Darlene Wolnik, national researcher and trainer for public markets and food systems	Whether your market is already well-loved or just beginning, finding the right way to become and to remain a "beloved institution" is key to every market's long term survival. Great markets have two things in common: they offer the most opportunities for people to feel "ownership," and they find innovative ways to balance the benefits among all of those that they serve. These two working sessions (beginner and advanced) will offer in-depth classroom work for markets to map out their own formula for stability and success.
Flagship Market Roundtable	Abbey Willard, Local Goods Coordinator for the Vermont Agency of Agriculture, Food, & Markets	Flagship markets are those that have stabilized their internal structure and management, and are poised to affect their larger food or civic community through policy or replication strategies. Their vendors often anchor other markets and their market organization is often called upon to share structural ideas with other markets. In this roundtable, flagship market managers will share successes and challenges with their peers, building relationships and connections to strengthen markets across the state.

2013 Vermont CSA Survey

Dear CSA Farmers,

We hope that you are having a good winter preparing for the coming growing season! NOFA- VT is preparing, too, by requesting your input through our annual CSA survey. Its purpose is two-fold:

1. To update the CSA directory on our website. This survey gives you the opportunity to update your online listing with current information. **Please note that our new policy is to offer CSA directory listings only to farms that are either certified organic through Vermont Organic Farmers or are members of NOFA-VT.** The benefits of NOFA-VT membership extend far beyond your online listing, and include: discounts on workshops, conferences, and our annual bulk order of farming supplies; our quarterly *NOFA Notes* newsletter; *The Natural Farmer* quarterly journal; and more! Visit www.nofavt.org to join, or request a membership brochure via e-mail: info@nofavt.org.

2. It helps to determine the economic value of CSA to Vermont agriculture. We ask you to share some economic details about your CSA, which is then aggregated with others' responses and used in the Vermont Sustainable Agriculture Council's report detailing the contribution of local agricultural production to Vermont's economy, in testimony to the Vermont legislature, and through other CSA advocacy strategies. No individual farm numbers will ever be reported. We will also use some of the data in this survey to compile a report on the success and current status of CSAs in Vermont.

In order to ensure accurate listings, we cannot include information from farms who do not respond. We do not want to remove your CSA from our directory, so please do not miss this opportunity! Please fill out the attached survey and **return it by March 1, 2013, or complete it online at** http://www.surveymonkey.com/s/TND2JYD.

If you have any questions, please contact us: erin@nofavt.org or 802-434-4122.

Wishing you a bountiful 2013 season,

Enid Wonnacott,
Executive Director

Erin Buckwalter,
Direct Marketing Coordinator

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1. Contact Information: This information will allow NOFA-VT to contact you about resources and opportunities for your CSA. It will also be used on the NOFA-VT CSA directory (www.nofavt.org/find-organic-food/csa-listing) and may be edited for length. **If there is information you do not want listed on the web directory, please check the adjacent box**.

Farm Name: _____

Name(s): _____

Address: ☐
_____ not for web directory

Phone: ☐
_____ not for web directory

E-mail: ☐
_____ not for web directory

Website: _____ not for web directory

2. Share Details

Do you accept payment from or participate in the following programs for your CSA shares (check all that apply):

3SquaresVT (formally food stamps) _____

Vermont Farm Share Program_____ Senior Farm Share Program ____ Payment plans ____
Other types of subsidized shares (please specify)
_____

Please write a brief paragraph describing your farm and CSA. This will appear on the website directory (www.nofavt.org/find-organic-food/csa-listing). If there are no changes from how it is currently listed in the CSA directory, please write SAME**.**

Please write a few sentences about pick up locations and times.

What seasons do you offer a CSA share:

Summer ____ Fall ____ Winter ____ Spring ____

What counties do you serve?

Addison ____
Bennington ____
Caledonia ____
Chittenden ____
Essex____
Franklin ____
Grand Isle ____
Lamoille ____
Orange ____
Orleans ____
Rutland ____
Washington ____
Windham ____ Windsor ___

Please check all the products that your CSA offers:

Vegetables ____
Bread ____
Eggs ____
Milk ____
Cheese ____
Cider/apples ____
Grains ____
Chicken ____
Turkey ____
Beef ____
Pork ____
Lamb ____
Berries ____
Flowers ____
Canned goods ____
Other _____
_____

Is your farm **certified** organic? Yes ____ No ____ If yes, by whom?_____ Is there a pick-your-own component? Yes ___ No ____

3. Share information

Total number of shares sold in 2012 _____ Total value of shares sold in 2012 $_____

Expected number of shares to sell in 2013 _____

Share cost for 2013 (please list all share sizes) _____

4. CSA History and Financial Data

How many years have you had a CSA? _____ How many acres do you have in production? _____

What percentage of your farm income is generated from your CSA? _____

Do you want to increase the number of CSA shares you sell? _____

Approximately what percent of your 2011 members were return customers in 2012? _____

5. Networking

Do you partner with other farms, organizations or businesses to market your CSA shares and if so, which ones?

Would you like to see a statewide CSA promotional campaign? Yes ____ No ____

If so, which methods of publicity do you think would be most effective?

Statewide CSA brochure ____
Television and/or radio ads ____
Open farm days ____
Promotional events (e.g. CSA fair) ____
Other: _____

Would you be interested in a CSA forum online where Vermont CSA farmers could ask questions and share ideas? Yes ____ No ____

6. Technical Support

Would you like to receive technical assistance for your CSA farm and if so, in what areas?

Would you be willing to provide technical assistance to other CSA farms, and which skills could you offer?

Are there research questions you are interested in concerning CSA farms that could be looked at collectively?

What are your CSA's three greatest obstacles to more success?

1.

2.

3.

We would like to hear from you about what workshops and roundtable discussions you would like to see at the annual Direct Marketing Conference. What topics would you most like to learn or talk about with other CSA farmers?

1.

2.

Do you have any general suggestions for how NOFA-VT could help support CSA farms?

If you take part in the VT Farm Share Program: Since all of the funds for the Vermont Farm Share Program are raised through the **Share the Harvest** fundraiser, please indicate any restaurants that are your customers? We would like to send them information about Farm Share and Share the Harvest. Thank you!

Please return to NOFA-VT, PO Box 697, Richmond, VT 05477 **BY**
MARCH 1, 2013 – PLEASE!

RETURN SURVEY BY MARCH 1, 2013 to:
Erin Buckwalter
NOFA-VT
PO Box 697 Richmond, VT 05477

Northeast Organic Farming Association of Vermont
PO Box 697
Richmond, VT 05477

2014 Vermont CSA Survey

Dear CSA Farmers,

We hope that you are having a good winter preparing for the coming growing season! NOFA- VT is preparing, too, by requesting your input through our annual CSA survey. Its purpose is two-fold:

1. To update the CSA directory on our website. This survey gives you the opportunity to update your online listing with current information. **Please note that our policy is to offer CSA directory listings to farms that are either certified organic**

through Vermont Organic Farmers or are members of NOFA-VT. The benefits of NOFA-VT membership extend far beyond your online listing, and include: discounts on workshops, conferences, and our annual bulk order of farming supplies; our quarterly *NOFA Notes* newsletter; *The Natural Farmer* quarterly journal; and more! Visit www.nofavt.org to join, or request a membership brochure via e-mail: info@nofavt.org.

2. It helps to determine the economic value of CSA to Vermont agriculture. We ask you to share some economic details about your CSA, which is then aggregated with others' responses and used in the Vermont Sustainable Agriculture Council's report detailing the contribution of local agricultural production to Vermont's economy, in testimony to the Vermont legislature, and through other CSA advocacy strategies. No individual farm numbers will ever be reported. We will also use some of the data in this survey to compile a report on the success and current status of CSAs in Vermont, and inform our future CSA work.

In order to ensure accurate listings, we cannot include information from farms who do not respond. We do not want to remove your CSA from our directory, so please do not miss this opportunity! Please fill out the attached survey and **return it by our deadline of February 21, 2014, or complete it online at** http://www.surveymonkey.com/s/NOFACSA2014.

If you have any questions, please contact us: erin@nofavt.org , michael@nofavt.org or 802-434-4122.

Wishing you a bountiful 2014 season,

Erin Buckwalter,
Market Development and Community Food Security Coordinator

Michael Good,
Community Food Security Program Assistant

☐ **Check this box if you would not like your farm to be advertised on the NOFA-VT CSA Directory.**

1. **Farm Information:** Unless otherwise noted (see checkbox above), this information will be listed on the NOFA-VT CSA directory (www.nofavt.org/find-organic-food/csa-listing) and may be edited for length.

Farm Name: _____

Name(s): _____

Address: _____

Phone: _____

E-mail: _____

Website: _____

Personal Contact Information: If you would prefer to have information about resources and opportunities for your CSA sent somewhere else, please indicate this in the space below. **This information is for NOFA-VT use only and will not be listed on the web directory.**

2. CSA and Share Details

The information in this section will appear on the CSA directory (www.nofavt.org/find-organic-food/csa-listing).

Please write a brief paragraph **describing your farm and CSA**. (*If there are no changes from how it is currently listed in the CSA directory, please write SAME)*

Please write a few sentences about **pick up locations and times**. *(If there are no changes from how it is currently listed in the CSA directory, please write SAME)*

What seasons do you offer a CSA share: Summer ____ Fall ____ Winter ____ Spring ____

What counties do you serve?

Addison ____
Bennington ____
Caledonia ____
Chittenden ____
Essex____
Franklin ____
Grand Isle ____
Lamoille ____
Orange ____
Orleans ____
Rutland ____
Washington ____
Windham ____
Windsor ___

Please check all the products that your CSA offers:

Vegetables ____
Bread ____
Eggs ____
Milk ____
Cheese ____
Cider/apples ____
Grains ____
Chicken ____
Turkey ____
Beef ____
Pork ____
Lamb ____
Berries ____
Flowers ____
Canned goods ____
Other _____
_____

Is there a pick-your-own component? Yes ____ No ____

Is your farm **certified** organic? Yes ____ No ____ If yes, by whom? _____

For your CSA shares, do you accept payment from or participate in the following programs (check all that apply):

3SquaresVT (formally food stamps) _____
Vermont Farm Share Program_____
Senior Farm Share Program ____
Payment plans ____
Other types of subsidized shares (please specify)
_____

If you accept 3SquaresVT (formerly food stamps), who processes/accepts the EBT payments?

Your Farm _____
Other (please specify) _____
Community Based Organization (please specify) _____

3. Share and Financial Data

What percentage of your farm income is generated from your CSA? _____

Total number of shares sold in 2013 _____ Total value of shares sold in 2013 $_____

Approximately what percent of your 2012 members were return customers in 2013? _____

Anticipated number of shares for 2014 _____

Cost of shares for 2014 (please list all share sizes)_____

Do you want to increase the number of CSA shares you sell? Yes ____ No ____ If yes, by how much? _____

4. Networking

Do you partner with other farms, organizations or businesses to market your CSA shares? If so, which ones?

Would you like to see a statewide CSA promotional campaign? Yes ____ No ____
If yes, would you be willing to financially contribute to support a campaign? Yes ___ No ___

If so, which methods of publicity do you think would be most effective?

Statewide CSA brochure ____
Television and/or radio ads ____ Open farm days ____
Promotional events (e.g. CSA fair) ____
Other: _____

Due to overwhelming response that CSA farms would like a CSA forum to communicate with one another, we have created a new CSA listserv. Would you like us to add you to the forum? Yes ____ No ____
If you answered yes, we will add your farm email from the first page, but if there's anyone else from your farm that would like to be added, please add their email address below:

5. Technical Support

How many years have you had a CSA? _____ How many acres do you have in production? _____

Would you like to receive technical assistance for your CSA farm? If yes, in what areas?

Would you be willing to provide technical assistance to other CSA farms, and which skills could you offer?

Are there research questions you are interested in concerning CSA farms that could be looked at collectively?

Are there legal questions you are concerned about or legal resources that would benefit your CSA farms?

What are your CSA's three greatest obstacles to more success?

1.

2.

3.

We would like to hear from you about what workshops and roundtable discussions you would like to see at the annual Direct Marketing Conference. What topics would you most like to learn or talk about with other CSA farmers?

1.

2.

Do you have any general suggestions for how NOFA-VT could help support CSA farms?

***If you take part in the VT Farm Share Program:** Since the majority of funds for the Vermont Farm Share Program are raised through the **Share the Harvest** fundraiser, please indicate any restaurants that are your customers. We would like to send them information about Farm Share and Share the Harvest. Thank you!

RETURN SURVEY BY FEBRUARY 21, 2014 to:
Erin Buckwalter
NOFA-VT
PO Box 697 Richmond, VT 05477

Northeast Organic Farming Association of Vermont
PO Box 697
Richmond, VT 05477

2015 Vermont CSA Survey

RETURN SURVEY BY JANUARY 29, 2016
Mike Good | NOFA-VT | Richmond, VT 05477

FARM INFORMATION

Farm Name: _____

Farmer Name(s): _____

Street: _____ State: Vermont Zip: _____

E-mail: _____ Phone: _____

How many years have you had a CSA? _____

How many acres do you have in production (for your CSA)? _____

Is your farm **certified** organic? ☐ Yes ☐ No What products are certified? _____

CSA and SHARE DETAILS

The information in this section will appear on the CSA directory (www.nofavt.org/find-organic-food/csa-listing).

Farm and CSA Description
Include a description of your CSA and/or farm in the space below:

What season(s) do you offer shares?

☐ Summer ☐ Fall ☐ Winter ☐ Spring

What CSA Style(s) or Model(s) do you offer?

☐ Traditional Weekly Share ☐ Pre-Packaged Box ☐ Free Choice ☐ Farmstand

What pick-up types do you offer?

☐ On-Farm ☐ Off-Farm ☐ Workplace

Summer Pick-Up/Delivery Site(s)	**Day**	**County**
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____

Please check the primary share options your CSA offers (note: these products are not considered add-ons):

☐ Vegetables ☐ Meat (Type: _____) ☐ Other (Explain: _____)

Summer Share Option(s)

Size	**Description**	**Cost**
1. _____	_____	$ _____
2. _____	_____	$ _____
3. _____	_____	$ _____
4. _____	_____	$ _____

If you have Fall, Spring or Winter CSAs, please provide the share sites/day/options on the included piece of paper.

Does your CSA offer any of the following add-ons:

☐ Bread ☐ Cheese ☐ Eggs ☐ Meats (Type: _____)

☐ Flowers ☐ Milk ☐ Preserved Goods ☐ Fruits (Type: _____)

Does you CSA have a pick-your-own component? ☐ Yes ☐ No

Does your CSA accept any special forms of payment or participate in the following programs (check all that apply):

☐ 3SquaresVT (SNAP/EBT) ☐ Sliding Scale
☐ Payment Plans ☐ NOFA-VT Farm Share Program

If your farm accepts 3SquaresVT benefits, who operates and maintains ownership of the EBT machine?

☐ Our Farm ☐ Farmers Market: _____ ☐ Other: _____

SHARE and FINANCIAL DATA

Number of shares sold in 2015: Total | ____ Summer ____ Winter _____ ____ Fall ____ Spring

Total value of shares sold in 2015 (CSA generated income) $_____

What percentage of your farm income is generated from your CSA? _____ %

What was your member retention rate in 2015? _____ %

If you want to increase the number of CSA shares you sell, how many (total) would you be selling, ideally? _____

TECHNICAL SUPPORT

Would you be willing to provide technical assistance to other CSA farms? If so, what skills/expertise could you offer?

1. _____
2. _____

Are there research questions you are interested in concerning CSA farms that could be looked at collectively?

1. _____
2. _____

What are your CSA's greatest obstacles to greater success?

1. _____
2. _____

What topics would you most like to learn or talk about with other CSA farmers?

1. _____
2. _____

Do you have any general suggestions for how NOFA-VT could help support CSA farms?

EDUCATION

Did you attend any of the Direct Marketing track workshops at the NOFA-VT Winter Conference or Summer Workshop Series?

☐ Yes ☐ No

If yes, did you learn any new production or marketing practices that have improved your CSA? ☐ Yes ☐ No
Please explain:

*** NOFA-VT Farm Share Program participating farms:** The majority of funds for the Farm Share Program are raised through the **Share the Harvest** fundraiser. Please indicate any restaurants that are your customers so that we can send them information.

1. _____ 3. _____
2. _____ 4. _____

Northeast Organic Farming Association of Vermont
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Vermont CSA Report – 2013

In the beginning of 2014, the Northeast Organic Farming Association of Vermont (NOFA-VT) surveyed Vermont CSA (Community Supported Agriculture)[1] farms to assess the general status of CSAs in the state and to determine what technical assistance would be most useful for CSA farmers. The content gained from the survey also provides direction for statewide promotion.

Background Information

Sixty-one farms completed the 2013 CSA Survey, compared to 84 in 2012. Every CSA in the state is unique, offering different products during different seasons.

Product Selection

The majority of the reporting CSA farms (93.4%) offered vegetables and many provided flowers, eggs, berries, and chicken. The table below shows products offered by CSAs, compared to last year.

Products Offered by CSAs (2013)

Product	% of farms that offered product		# of farms that offered product
	2012	2013	
Vegetables	94.0%	93.4%	57
Flowers	57.1%	62.3%	38
Eggs	56.0%	49.2%	30
Berries	42.9%	49.2%	30
Chicken	45.2%	36.1%	22
Pork	29.8%	29.5%	18
Bread	28.6%	27.9%	17
Other[2]	23.8%	27.9%	17
Cider/apples	22.6%	23.0%	14
Cheese	19.0%	21.3%	13
Beef	25.0%	19.7%	12
Canned goods	20.2%	19.7%	12
Turkey	17.9%	14.8%	9
Lamb	15.5%	11.5%	7
Milk	10.7%	11.5%	7
Grains	8.3%	4.9%	3

[1] CSA refers to Community Supported Agriculture. Farmers sell seasonal shares to consumers, who pick up agricultural products (vegetables, eggs, meats, etc.) on a regular basis, often weekly or monthly. CSAs allow consumers to directly connect with the farms that grow their food and reinvests money into the local economy.

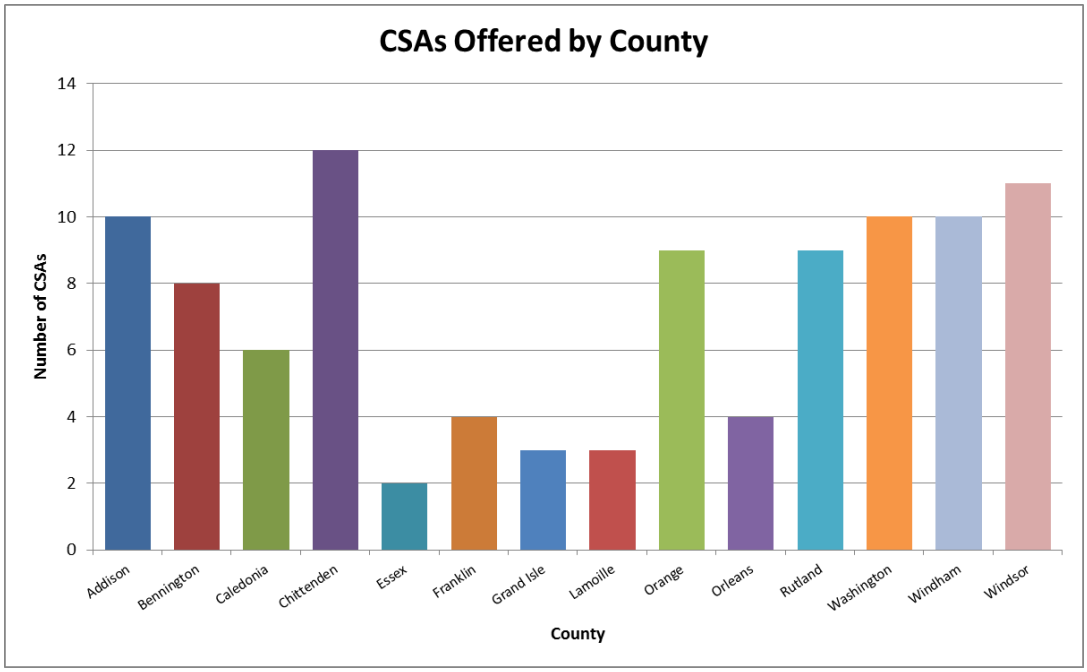
[2] Some products that farmers listed in the "other category" include: prepared foods (sauces, pesto), yogurt, cream, herbs, various fruits including melons, peaches, and plums, baked goods, culinary and medicinal herbs, tea, honey, jam, maple syrup, and lacto-fermented vegetables.

Pick Your Own
Forty percent of CSAs have a pick-your-own component integrated into their CSA share. This is often with products such as cut flowers, strawberries and peas.

Availability

Seasonality
Almost all (98%) of the CSA provide shares in the summer, 77% in the fall, 48% in the winter, and 41% in the spring. These percentages are similar to past years.

Pick-up and Delivery Sites
Twenty-three CSAs (38%) offered shares for pick-up or delivery in multiples counties. Chittenden County, the most densely populated county in the state, had the highest number of CSAs available, with 12 CSAs farms offering shares for residents. Residents of Essex County, in the Northeast Kingdom, had 2 farms to choose from, the fewest of any county in the state.



Cooperative Advertising and Add-Ons
Thirty-eight percent of CSA farms networked with other farms, businesses, restaurants or organizations to market their products. Some marketed their shares through advertisements and on the popular neighborhood forum, Front Porch Forum. Several bought products from other farms to enhance their CSAs (e.g. eggs), while a couple others sell their products to other farms as a supplement to their CSAs options (i.e. cover a crop failure).

Organic Certification
Fifty-three percent of reporting CSAs were certified organic.

Share Information

Share Pricing
Pricing of CSA shares varied drastically depending on share size, payment plans, and the number of weeks the share is provided. The highest share price was $2,285 for a full year share and the lowest was a voucher program that was available in $20 increments. The products offered and the length of the

share season was very different for each CSA farm, making it difficult to compare share costs across farms.

Shares Sold
In 2013, 5,129 shares were sold at 55 reporting farms. The average of 93 shares per farm remained consistent between 2012 and 2013 (2012: 6,674 shares from 72 farms). The highest number of total shares sold on one farm was 730 and the lowest was 5. Most farms (83%) want to increase the number of shares they sell in 2014 by an average of 27 shares.

Member Retention
On average, farms experienced 69% member retention between 2012 and 2013, with the low of 20% and the high of 97%.

Payment Options
Many CSA farms offered special CSA programs or subsidies for members to help offset upfront costs and make shares more financially accessible. Seventy-four percent of CSAs have payment plans. Other subsidy programs include participation in the Vermont Farm Share Program (53%), the Senior Farm Share Program (28%), and 3SquaresVT, formerly food stamps, (28%). Seven of the farms that accept 3SquaresVT benefits (41%) indicated that they partnered with a local organization to accept these benefits. Some farms offered work share options, while others were open to bartering. Several allowed payment for CSAs on a sliding scale, offered scholarships to interested low-income or senior members, or donated food to area senior meal sites or food shelves on a regular basis.

Business and Financial Information
Total CSA Generated Income
A reported total of $1,581,978 was generated from the sale of CSA shares in 2013 ($405.95/share), compared to $2,723,503 in 2012 ($408.07/share). Although there is a significant difference between reported 2012 and 2013 totals, the average share price remained constant.

CSA Generated Income
In 2013, individual CSA farms earned between $350 and $320,000, with an average of $32,285 and a median of $17,000 from their CSA programs. These numbers compare unfavorably to 2012 when the average earned from CSA share sales was $41,900 with a median of $15,000. Removing the three largest earning CSA farms in 2013 from calculations ($100,000, $140,000, and $320,000), resulted in an average income of $22,217 for CSA farms.

CSA Income ($)	# of Farms (2013)
0-5,000	9
5,001-10,000	12
10,001-15,000	5
15,001-20,000	5
20,001-25,000	1
25,001-30,000	5
30,001-35,000	2
35,001-40,000	2
41,001-45,000	1

45,001-50,000	1
50,001-55,000	1
55,001-60,000	0
60,001-65,000	0
65,001-70,000	1
70,001-75,000	1
75,001-80,000	1
80,001-85,000	0
85,001-90,000	0
90,001-95,000	1
95,001-100,000	1
100,001-150,000	1
150,001-200,000	0
200,001-250,000	0
250,001-300,000	0
300,001-350,000	1

CSA Percent of Farm Business
The percent of farm income generated from CSA share sales ranged from 3% to 100%, with an average of 35%.

Years in Operation
CSA farms have been selling shares anywhere from 25 years to starting this year, with the average CSA selling for 7 years. Six farms indicated that 2013 was their first year operating a CSA as part of their farm business.

# of Years	# of Farms
1-2	11
3-4	8
5-6	10
7-8	10
9-10	4
11-12	4
13-14	2
15-16	4
17-18	2
19-20	2
21-22	0
23-24	0
25+	1

Acres in Production
Field production acreage for CSA use varied between half an acre and 300 acres, with CSA farms averaging 29.6 acres in production.

Needs
Marketing and Promotion

The majority of the CSA farms surveyed (89%) would like to see a statewide CSA promotional campaign initiated. Of the farmers that responded to this question, 61% thought that open farm days would be the most effective method of publicity for a statewide CSA campaign, followed by television/radio ads (46%) and a statewide CSA brochure (43%). Forty-one percent thought that promotional events such as a CSA fair would be another helpful marketing tool. Other suggestions included incentive programs through businesses (discount on health insurance, etc.), promotion through newspaper and magazine ads, social media (Facebook) and other online resources (websites, etc.), and outreach to parents involved in the Vermont school systems.

Networking
Eighty-nine percent of CSA farmers were interested in an online CSA forum to ask questions and share ideas with one another.

Response
In response to these requests, NOFA-VT organized a Open CSA Farm Day in May 2014 which was promoted through websites, in partnership with community organizations, statewide press releases, social media and other online resources. In addition, NOFA-VT created a CSA forum in early 2014 for farmers to ask questions and share ideas.

Challenges
Technical Assistance (Receiving)
Thirty-nine percent of CSA farmers said they would like to receive technical assistance (TA). Farmers reported that their greatest need for TA was with marketing and advertising (specifically with social media). Other needs reported were in the areas of member recruitment and retention, Farm Viability and business planning, recordkeeping and tax services, orchard development, selling poultry as an add-on to other CSA farms, efficient winter and summer storage, packaging, disease and pest identification, dry bean processing, and winter growing. The list of technical assistance topics generated from this survey were used in the development of workshops for the January 2014 Direct Marketing Conference and the 2014 Summer Workshop Series.

Other ideas for topics that farmers thought would be helpful included:
- accepting alternative payment methods (PayPal, EBT, etc.)
- experiences with CSA software
- how to collaborate with other CSAs to ensure optimal productivity and increase share diversity
- marketing/advertising and best ways to reach new customer base (online, low-income, etc.)
- member retention and engagement (particularly in the off-season)
- work share logistics
- strategies for customer education
- affordable and creative ways to build infrastructure and become more efficient
- managing different CSA models (pick-your-own, free choice, etc.)
- early and extended season production
- farm site design for efficient pick-up and distribution
- grant writing techniques

Technical Assistance (Providing)

Recognizing their own strengths, 60% of CSA farmers said they were willing to offer TA. The primary areas of expertise offered were financial planning, crop production, and succession planning. Other areas of expertise mentioned included:

- marketing
- irrigation techniques
- organizational skills
- CSA management and distribution techniques
- crop planning
- budgeting
- advice on starting up a working-member CSA model
- community building

There appears to be a large group of experienced farmers willing to provide many of the TA needs of beginning CSA farmers. NOFA-VT is working to coordinate TA exchange between CSA farmers.

Research

Farmers were asked what research questions about CSAs they would like to see studied. There were many great suggestions, a few of which were:

- average weekly/seasonal food savings experienced by a CSA consumer
- how unheated high tunnels can be used to make a CSA more profitable
- financial viability of for-profit aggregated CSA models
- how to keep up a good member retention rate
- most successful/cost effective marketing strategies
- CSA-scale passive cold storage systems
- effective techniques for reaching unengaged consumers
- free-choice CSA software
- GAP issues and how they will impact CSAs
- hierarchy of criteria used by consumers when choosing a CSA
- collaborative regional fundraisers for the Vermont Farm Share Program
- determining how the CSA model fits in the emerging online market model
- dealing with the high attrition rate of members who have their shares delivered

Obstacles

CSA farmers were asked to identify the three largest obstacles to greater success in their CSA businesses. The top themes are listed below, followed by the number of farmers reporting the issue:

1. Building/maintaining/growing customer base (18)
2. Competition with other CSAs, supermarkets (17)
3. Labor, time and energy (15)
4. Consumer perceptions of food production and cost (11)
5. Customer education (11)
6. Advertising/marketing/outreach (10)
7. Infrastructure (9)
8. Customer needs/service (7)
9. Access to land (7)
10. CSA Location (pick-up site) (5)

Conclusions

CSAs are a thriving part of the agricultural economy in Vermont. Each year, new CSAs are formed in new areas of the state. All the while, established CSA farms continue to adapt to the changing needs of the communities they serve by offer different share sizes, seasonality, and a diversity of new products. With the average CSAs operating for less than 8 years, CSA farms are a sector of the Vermont food

economy that is beginning to establish its own unique identity. As the market for locally produced foods continues to mature in Vermont, a primary concern of CSA operations will lie in capturing some of this increasing potential customer base, which will be accomplished by educating consumers on the value of a CSA share.

The value of a CSA share for a consumer comes from the diversity of products provided on a regular basis from a local farmer. Each CSA is different and each is trying to find their own niche in a market that demands innovation and excitement. New and creative marketing and outreach strategies will have to be undertaken by CSA farmers to remain competitive and retain shareholders from season-to-season. It remains clear that although CSAs becoming more familiar to consumers in Vermont, there is still a need to assist farmers with marketing and outreach, as well as work out creative ways to make share more economically and logistically accessible to consumers (e.g. workplace delivery).

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Vermont CSA Report – 2014

In early 2015, the Northeast Organic Farming Association of Vermont (NOFA-VT) surveyed Vermont Community Supported Agriculture (CSA)[1] farms to assess the general status of CSAs the previous year and to determine what technical assistance would be most useful for CSA farmers. The content gained from the survey also provides direction for statewide promotion and programs.

Background Information

Forty-eight farms completed the 2014 CSA Survey, compared to sixty-one in 2013.

Product Selection

Every CSA in the state is unique, offering different products during different seasons. The majority of the reporting CSA farms (95.8%) offered vegetables and many provided flowers, eggs, berries, and chicken. The table below shows products offered by CSAs, compared to last year (2013).

Products Offered by CSAs (2014)

Product	% of farms that offered product		# of farms that offered product
	2013	2014	
Vegetables	93.4%	97.9%	46
Flowers	62.3%	61.7%	29
Berries	49.2%	53.2%	25
Eggs	49.2%	44.7%	21

Chicken	36.1%	34.0%	16
Pork	29.5%	25.5%	12
Other[2]	27.9%	25.5%	12
Bread	27.9%	19.1%	9
Beef	19.7%	23.4%	11
Canned goods	19.7%	19.1%	9
Turkey	14.8%	14.9%	7
Cheese	21.3%	12.8%	6
Cider/apples	23.0%	12.6%	6
Lamb	11.5%	10.6%	5
Milk	11.5%	10.6%	5
Grains	4.9%	0%	0

Pick Your Own

Sixty percent of CSAs have a pick-your-own component integrated into their CSA share. This is often with products that are labor intensive to harvest, such as cut flowers, strawberries and snap peas.

[1] Farmers sell seasonal shares to consumers, who pick up agricultural products (vegetables, eggs, meats, etc.) on a regular basis, usually weekly during a set period of time. CSAs allow consumers to directly connect with the farms that grow their food and reinvests money into the local economy.

[2] Some products that farmers listed in the "other category" include: prepared foods (sauces, pesto), yogurt, cream, herbs, various fruits including melons, peaches, and plums, baked goods, culinary and medicinal herbs, tea, honey, jam, maple syrup, and lacto-fermented vegetables.

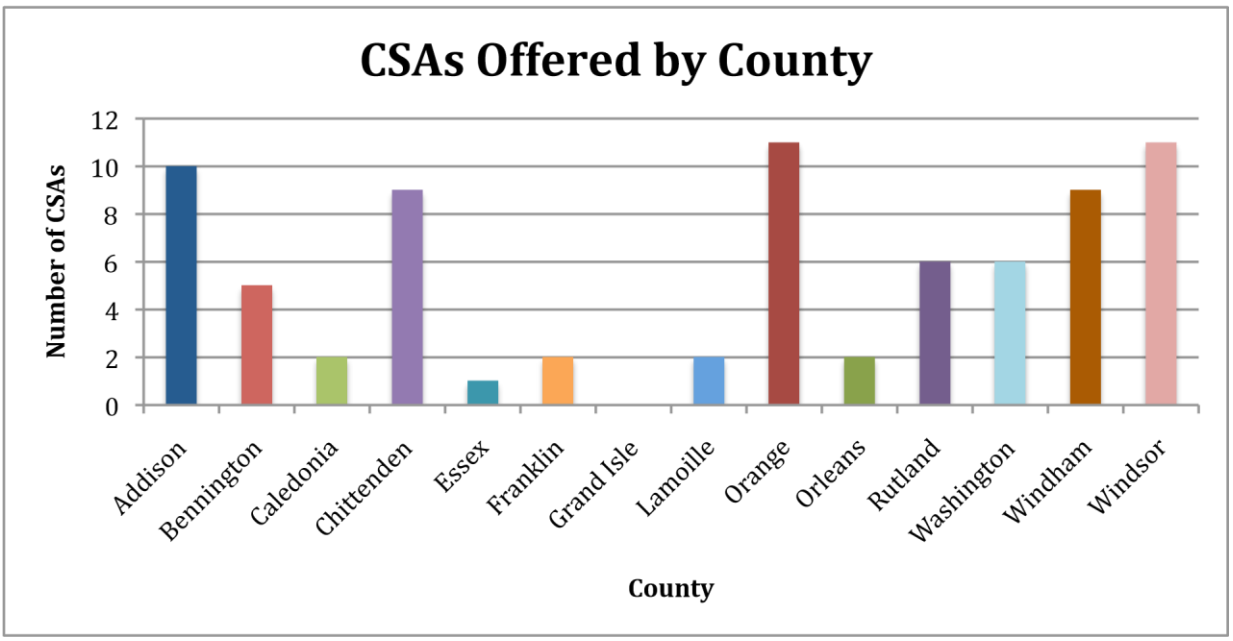
Availability

Seasonality

Almost all (98%) of the CSAs provide shares in the summer, 80% provided shares in the fall, 60% provided shares in the winter, and 38% provided shares in the spring. These percentages are similar to past years.

Pick-up and Delivery Sites

All farms offered on-farm pick-up options for their CSAs. Twenty-one CSAs (45%) offered shares for off-farm pick-up or delivery in multiples counties. Windsor and Orange County had the highest number of CSAs available, with 11 CSA farms offering shares in these counties. Grand Isle County had zero CSA farms offering shares, the fewest of any county in the state (Note: NOFA-VT knows there to be CSAs available in Grand Isle county, but did not receive any completed surveys from these CSA farms).



Cooperative Advertising and Add-Ons

Fifty-seven percent of CSA farms networked with other farms, businesses, restaurants or organizations to market their products and/or offer off-site pick-up options. Some CSAs marketed their shares through advertisements and on the popular neighborhood forum, Front Porch Forum.

Several bought products from other farms to enhance their CSAs (e.g. eggs), and one CSA operated under a cooperative model of three farms who jointly sold their products as a CSA under one business name.

Organic Certification

Fifty-seven percent of reporting CSAs were certified organic.

Business and Financial Information

Total CSA Generated Income

A reported total of $2,039,525 was generated from the sale of CSA shares in 2014 ($360.08/share), compared to $1,581,978 in 2013 ($405.95/share).

CSA INCOME ($)	0-5,000	5,001-10,000	10,001-15,000	15,001-20,000	20,001-25 000	25,001-30,000	30,001-35,000	35,001-40,000	41,001-45,000	45,001-50,000	50,001-55,000	55,001-60,000	60,001-65,000	65,001-70,000	70,001-75,000	75,001-100,000	100,001-150,000	150,001-250,000	250,001-300,000	300,001-400,000
# Farms	5	4	3	6	4	2	3	1	1	2	0	2	1	0	3	0	3	0	1	1

CSA Generated Income
In 2014, individual CSA farms earned between $1,100 and $360,000, with an average of $47,430 and a median of $8,000 from their CSA programs. These numbers compare favorably to 2013 when the average earned from CSA share sales was $32,285 with a median of $17,000. Removing the three largest earning CSA farms in 2014 from calculations ($140,000, $255,000 and $366,000), resulted in an average income of $38,565 for CSA farms.

CSA Percent of Farm Business
The percent of farm income generated from CSA share sales ranged from 2% to 100%, with an average of 35%.

Years in Operation
CSA farms in VT have been actively selling shares for upwards of the past 26 years, with the average CSA selling for eight years. Three farms indicated that 2014 was their first year operating a CSA as part of their farm business (Note: These farms were excluded from financial calculations, since they are not reporting CSA generated income yet).

Years in Operation	New	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25+
# Farms	3	7	4	8	5	7	3	2	3	0	2	0	1	2

Acres in Production
Field production acreage for CSA use varied between half an acre and 100 acres, with CSA farms averaging 12.7 acres in production.

Share Information

Share Pricing
Pricing of CSA shares varied significantly depending on share size, product variety, and the length of the share period. The highest share price was $900 for a large winter share and the lowest was a farm stand style share that could be purchased in $50 increments. Based on a calculation of total reported CSA General Income ($2,039,525) divided by the total number of CSA shares sold (5,664), the average share cost in 2014 was $360.08. The difference between shares offered by CSA farms makes comparison of share costs between farms difficult, and so NOFA-VT advises consumers to choose a CSA that can be integrated into their current lifestyle, and recognizes the availability of a diversity of share types as a positive attribute of CSAs.

Shares Sold
In 2014, 5,664 shares were sold at 46 reporting farms. The average of 123 shares per farm was an increase from the 2013 average of 93 shares per farm (2013: 5,129 shares from 55 farms). The highest number of total shares sold on one farm was 790 and the lowest was 7. Most farms (71.1%) want to increase the number of shares they sell in 2015 by an average of 31 shares.

Member Retention
On average, farms experienced 71% member retention between 2013 and 2014, with the low of 38% and the high of 95%.

Payment Options
Many CSA farms offered special CSA programs or subsidies for members to help offset upfront costs and make shares more financially accessible. Eighty-nine percent of CSAs offer payment plans. Other subsidy programs include participation in the Vermont Farm Share Program (66%), the Senior Farm Share Program (36%), and accepting 3SquaresVT food benefits (19%). Five of the farms that accept 3SquaresVT benefits (55%) indicated that they partnered with a local organization to accept these benefits. Some farms offered work share options, while others were open to bartering. Several allowed payment for CSAs on a sliding scale, offered scholarships to interested low-income or senior members, or donated food to area senior meal sites or food shelves on a regular basis.

Marketing and Promotion
The majority of the CSA farms surveyed (91.5%) use brochures and flyers as methods of promoting their CSA programs. Eighty-one percent used social media, 53.2% used open and on-farm days, and 36.2% used community events. Fifty-three percent of farmers used other sources of promotion, which included sources such as Front Porch Forum, workshops, farmers markets, newsletters, and websites.

Challenges
Technical Assistance (Receiving)
Farmers reported that their greatest need for technical assistance was with marketing and advertising (specifically with social media). Other needs reported were in the areas of:

- member recruitment and retention
- efficient winter and summer storage
- farm viability and business planning
- packaging
- recordkeeping and tax services
- disease and pest identification
- orchard development
- dry bean processing
- selling poultry as an add-on to other CSA farms
- winter growing

The list of technical assistance topics generated from this survey was used in the development of workshops for the NOFA-VT Winter Conference and Summer Workshop Series.

Technical Assistance (Providing)
Recognizing their own strengths, 49% of CSA farmers said they were willing to offer technical assistance. The primary areas of expertise offered were marketing, CSA organization and operation, and succession planning. Other areas of expertise mentioned included:

- Web design
- Small scale CSA techniques
- Community building

- CSA management and distribution techniques
- Crop planning
- Budgeting

There appears to be a large group of experienced farmers willing to provide many of the TA needs of beginning CSA farmers. NOFA-VT is working to coordinate technical assistance exchange between CSA farmers.

Research

Farmers were asked what research questions about CSAs they would like to see studied. There were many great suggestions, a few of which were:

- Average weekly/seasonal food savings experienced by a CSA consumer
- Financial viability of for-profit aggregated CSA models
- How to keep up a good member retention rate
- Most successful/cost effective marketing strategies
- CSA-scale passive cold storage systems
- Effective techniques for reaching unengaged consumers
- Free-choice CSA software
- GAP issues and how they will impact CSAs
- Hierarchy of criteria used by consumers when choosing a CSA
- Possibility of utilizing pay-when-you-can methods
- Determining how the CSA model fits in the emerging online market model
- Dealing with the high attrition rate of members who have their shares delivered (versus on-farm pick-up)

Obstacles

CSA farmers were asked to identify the three largest obstacles to greater success in their CSA businesses. The top themes are listed below, followed by the number of farms reporting the issue:

1. Labor, time and energy (14)
2. Competition with other CSAs and supermarkets (12)
3. Advertising/marketing/outreach (9)
4. Customer willingness to try new foods and spend time preparing them (7)
5. Building/maintaining/growing customer base (5)
6. Consumer perceptions of food production and cost (5)
7. Infrastructure (4)

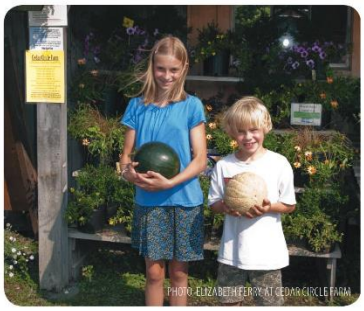
"I love knowing where my food comes from and connecting with the people that grew it."

– Nick, Burlington

Find a farmers market, farm stand, or CSA near you!
www.nofavt.org/BuyDirect

Why YOU should buy direct

- Freshness
- Competitive pricing and value
- Quality and variety
- Seasonality
- Support family farms
- Strengthen local economies
- Maintain working landscapes
- Know the story of your food



NOFA Vermont is a member-based nonprofit organization working to grow local farms, healthy food, and strong communities in Vermont since 1971.

Northeast Organic Farming Association of Vermont
www.nofavt.org • 802-434-4122 • info@nofavt.org

Buy Fresh Buy Local

BUY DIRECT From Your Farmer!

Northeast Organic Farming Association of Vermont
www.nofavt.org

Buying Direct

When you buy directly from a farmer, you get fresh, delicious, and healthy food at a competitive price and the farmer receives a fair value for their product.

You can buy directly from a local farm through farmers markets, farm stands, and Community Supported Agriculture (CSA) shares.

All of these options give you the same benefits of quality and community, and each also has its own special features.

But doesn't it cost more?

Not necessarily! NOFA-VT has conducted two research projects studying the costs of produce at farmers markets and CSAs compared to grocery stores.

For certified organic produce, **buying direct is usually less expensive than grocery stores**, and even for conventional items, the price is often very competitive.

In addition, more than half of Vermont's farmers markets, and many farm stands and CSAs, accept 3SquaresVT (food stamps) benefits through EBT cards.

NOFA-VT also has programs that support limited-income Vermonters in accessing direct markets: the Vermont Farm Share Program for CSAs and EBT matching coupons for farmers markets. Learn more on our website or call the office at 802-434-4122.

www.nofavt.org/BuyDirect

Farmers Markets

Why they're great:

- Variety of products and producers to choose from; typically includes vegetables, fruits, meat, eggs, cheese, baked goods, and more
- Often have music or other entertainment
- Seasonal and certified organic items priced competitively to grocery stores

Farmers market shopping tips:

- Arrive early for the best selection
- Do a "lap" of the market to see what's available before you buy
- Bring your own bag
- Bring small bills or check our directory to see if your market accepts debit & EBT cards
- Buy in bulk and in season for the best deals
- Try something new and ask questions

To find out about special events, new products, and life on the farm, follow your favorite farms and farmers markets on social media or sign-up to receive their newsletters.

Farm Stands

Why they're great:

- Direct relationship with farm
- Choice of product
- Farms may offer loyalty discounts or discounts for pre-payment (i.e. $550 for $500)

CSAs

Community Supported Agriculture

Why they're great:

- Direct relationship with farm
- Better value than purchasing from grocery stores

How to choose the right CSA for you:

When you join a CSA, you are purchasing a season's share of the farm's products. CSAs are most popular in the summer, but you can also buy a share from many farms in the fall and winter. CSA members typically pick up their share at the farm each week, but some farms offer delivery or alternative pick-up sites.

Things to consider when reviewing CSAs in your area:

- Share size
- Cost & payment options
- Season and share duration
- Products available
- Pick-up or delivery options
- Production practices (certified organic vs. conventional)
- Add-on options (e.g. eggs, bread)
- Pick-your-own options
- Interactive, educational, or social events

Find a farmers market, farm stand, or CSA near you at www.nofavt.org/BuyDirect

Find Your Addison County Direct Markets

When you buy directly from a farmer, you get fresh, delicious, and healthy food at a competitive price and the farmer receives a fair value for their product. You can buy directly from a local farm though **farmers markets, farm stands, and Community Supported Agriculture (CSA) shares**. All of these options give you the same benefits of quality and community, and each also has its own special features. Check out these local options to see which is the best fit for you!

Farmers Markets

Wednesday	Thursday	Saturday
Middlebury Farmers Market **Where:** The Marbleworks **When:** 9 a.m.-12:30 p.m. EBT and Debit Cards accepted	Vergennes Farmers Market **Where:** Town Green **When:** 3 p.m.- 6:30 p.m	Middlebury Farmers Market **Where:** The Marbleworks **When:** 9 a.m.-12:30 p.m. EBT and Debit Cards accepted

CSA = Community Sponsored Agriculture
FS = Farm Stand
* = Accepts 3SquaresVT

CSAs and Farm Stands

Alchemy Gardens (CSA, FS)*
Shrewsbury
alchemygardensvt.com

Anchor Light Farm (CSA)
Braintree
anchorlightfarm.com

Champlain Orchards (FS)
Shoreham
champlainorchards.com

Elmer Farm (CSA)
Middleburg
elmerfarm.com

Footprint Farm (CSA)
Starksboro
footprintfarmvt.com

Four Pillars Farm (CSA)
Whitting
fourpillarsfarmvt.com

Full Moon Farm (CSA)
Hinesburg
fullmoonfarminc.com

Gildrien Farm (CSA)*
Leicester
gildrienfarm.com

Golden Russet Farm (FS)
Shoreham
goldenrussetfarm.com

Golden Well Farm & Apiaries (CSA)
New Haven
goldenwellapiaries.com

Good Earth Farm (CSA,FS)
Brandon
facebook.com/
goodearthfarmveggies

Jubilee Farm (CSA, FS)
Huntington

Lalumiere Farm Stand and Greenhouse (FS)
Ferrisburg

Lewis Creek Farm (CSA,FS)
Starksboro
lewiscreekfarm.com

Mountainview Orchards (FS)
Shoreham

Metta Earth Farm & Garden (CSA)
Lincoln
mettaearth.org

New Leaf Organics (CSA)
Bristol
newleaforganics.org

Stony Loam Farm (CSA)
Charlotte
stonyloamfarm.com

Sugar Mountain Farm (CSA)
West Topsham
SugarMtnFarm.com

The Last Resort Farm (CSA, FS)
Monkton
lastresortfarm.com

Trillium Hill Farm (CSA, FS)
Hinesburg
trilliumhillfarm.net

Weed Farm (FS)
Lincoln

Wood's Market Garden (CSA,FS)
Brandon
woodsmarketgarden.com

For more information about direct markets, visit **www.nofavt.org/BuyDirect** or call the office at **802-434-4122**


Join
NOFA Vermont & your local farmers for
CSA OPEN FARM DAY!
Photo by Elizabeth Ferry at Cedar Circle Farm
Sunday, May 4, 1:00–4:00 pm
Get to know farmers in your community!
Farms will be opening their barn doors for farm tours, scavenger hunts, sampling and tastings, and more!
Photo by Elizabeth Ferry at Cedar Circle Farm
Check out this farm!
Northeast Organic
NOFA·VT
Since 1971
Farming Association of Vermont
Find more details and the list of all participating farms online at www.nofavt.org/CSA-open-farm or call 802-434-4122.
The 2014 CSA Open Farm Day is made possible in part by a Vermont Specialty Crop Block Grant.
USDA
VERMONT
AGENCY OF AGRICULTURE, FOODS & MARKETS

FOR IMMEDIATE RELEASE – 3/19/14

NOFA Vermont announces CSA Open Farm Day

The Northeast Organic Farming Association of Vermont announces the first CSA Open Farm Day. On Sunday, May 4, 2014 from 1:00–4:00 pm, farms across Vermont will open their greenhouses, barns, and fields to community members. This day is an opportunity for everyone to get to know a local farmer, and falls just before the beginning of most farms' CSA programs. CSA stands for Community Supported Agriculture, and is a form of direct farm-to-consumer sales in which the customer typically subscribes in the spring to a share of the season's produce.

Over 40 farms will participate in this year's CSA Open Farm Day. Farm activities may include tours, demonstrations, product tasting, scavenger hunts, and more. Everyone is welcome to this community event.

Learn more and find a participating farm near you at www.nofavt.org/CSA-open-farm. The 2014 CSA Open Farm Day is made possible in part by a Vermont Specialty Crop Block Grant.

# # #

FOR IMMEDIATE RELEASE – 4/24/14

NOFA Vermont announces CSA Open Farm Day

The Northeast Organic Farming Association of Vermont announces the first CSA Open Farm Day. On Sunday, May 4, 2014 from 1:00–4:00 pm, farms across Vermont will open their greenhouses, barns, and fields to community members. This day is an opportunity for everyone to get to know a local farmer, and falls just before the beginning of most farms' CSA programs. CSA stands for Community Supported Agriculture, and is a form of direct farm-to-consumer sales in which the customer typically subscribes in the spring to a share of the season's produce.

Over 50 farms will participate in this year's CSA Open Farm Day. Farm activities include tours, demonstrations, product tasting, scavenger hunts, and more. Everyone is welcome to this community event.

Listing of Participating Farms: Sunday, May 4, 2014

Visit a participating "Open CSA Farm Day" farm on May 4th. For an up-to-date listing of participating farms, visit the NOFA-VT website www.nofavt.org/CSA-open-farm or call the office at 802-434-4122.

Peace of Earth Farm	Albany
The Garden or Eurbin	Barton
Rogers Farmstead	Berlin
Honey Locust Farm	Bradford
Good Earth Farm	Brandon
Wood's Market Garden	Brandon
Wild Carrot Farm	Brattleboro
Footprint Farm	Bristol

Elmer Farm	Middlebury
True Love Farm	North Bennington
Green Mountain Girls Farm	Northfield
Killdeer Farm	Norwich
Sweetland Farm	Norwich
Mighty Food Farm	Pownal
Wildstone Farm	Pownal
Akaogi Farm	Putney

The Last Resort	Bristol
Intervale Community Farm	Burlington
Valley Dream Farm	Cambridge
Winter Moon Farm	Corinth
Pete's Greens	Craftsbury
Evening Song Farm	Cuttingsville
New Leaf CSA	Dummerston
Someday Farm	E. Dorset
Seedfolks Farm	East Calais
Jupiter Farm	Elmore
Your Farm	Fairlee
Blue Heron Farm	Grand Isle
M.R. Harvest, LLC	Grand Isle
Circle Mountain Farm	Guilford
Hermit Thrush Homestead	Halifax
Cedar Mountain Farm	Hartland
Full Moon Farm, Inc.	Hinesburg
Arcana Gardens & Greenhouses	Jericho
Jericho Settlers' Farm	Jericho

Maple Wind Farm	Richmond
Luna Bleu Farm	S Royalton
Clear Brook Farm	Shaftsbury
Golden Russet Farm	Shoreham
Alchemy Gardens	Shrewsbury
Health Hero Island Farm	South Hero
Joe's Brook Farm	St Johnsbury
Boardman Hill Farm	W Rutland
Gaylord Farm	Waitsfield
Hartshorn Farm Market	Waitsfield
Harvest Hill Farm	Walden
Muddy Boots CSA	Warren
Berry Creek Farm	Westfield
Harlow Farm	Westminster
Mountain Foot Farm	Wheelock
Sunrise Farm	White River Junction
Deep Meadow Farm	Windsor - Ascutney
Good Heart Farmstead	Worcester

The 2014 CSA Open Farm Day is made possible in part by a Vermont Specialty Crop Block Grant.

# # #

FOR IMMEDIATE RELEASE
July 6, 2015

NOFA–VT Announces First Open Farm Week

The Northeast Organic Farming Association of Vermont (NOFA-VT) announces the first Open Farm Week, scheduled for Monday, August 3rd through Sunday, August 9th, 2015. The public is invited to visit farms and farmers markets, and to partake in this opportunity to meet local farmers and explore the land from which our food comes.

Building off the success of the 2014 Open CSA Farm Day, NOFA-VT is partnering with several organizations from around the state to expand this event to include seven days of open access to farms throughout Vermont. NOFA-VT's goal through this event is to connect people with farmers and promote direct buying through farmers markets, Community Support Agriculture (CSA) farms and farm stands. This event also coincides with the 2015 National Farmers Market Week.

Over **90** farms from across the state of Vermont are participating in this inaugural Open Farm Week, each offering unique activities, including tours, demonstrations, product tasting, scavenger hunts, and more. A full list of the farmers markets, CSAs, and farm stands that are participating can be found online at www.nofavt.org/openfarmweek

"This weeklong event is really a celebration of our farmers and our agricultural landscape," said NOFA-VT's Erin Buckwalter. "We want to organize a fun and successful state-wide event, and have

it grow every year, as a tradition for Vermonters and visitors to Vermont to be able to enjoy the 'inside scoop' and get to know more about our farms."

Learn more and find a participating farm or farmers market near you at www.diginvt.com/blog/openfarmweek. The 2015 Open Farm Week is made possible in part by funding NOFA-VT received from Vermont Specialty Crop Block Grant and USDA Agricultural Marketing Service Farmers Market Promotion Program.

# # #

About NOFA Vermont: NOFA Vermont is member-based organization working to grow local farms, healthy food, and strong communities in Vermont. Our members are farmers, gardeners, educators and food lovers of all sorts – anyone who wants to help us create a future full of local food and local farms. Our programs include farmer and gardener technical assistance, farm to school support, organic certification, advocacy, an online apprentice and farm worker directory, an annual Winter Conference, and programs that work to ensure access to fresh, local food to all Vermonters, regardless of income.

Project 3: Food Safety Education and Training to Apple, Vegetable & Berry Growers – Final Report

PROJECT SUMMARY

The majority of produce farms in Vermont direct market their products, as such, few are currently required by buyers to be GAPs certified. Yet to stay competitive, grow their businesses, and expand to new markets, growers must understand produce safety, write and implement produce safety plans, and train their employees in food safety practices.

The University of Vermont Extension's Produce Safety Program requested $19,826.50 to **conduct 10 workshops on produce safety practices,** and to **produce three YouTube videos on specific produce safety practices** for apple, vegetable and berry growers in Vermont. The dual goals of this project were to 1) improve food safety by educating farmers on how to reduce risks of on-farm microbial contamination and 2) strengthen the regional food system by helping fruit and vegetable farmers maintain existing markets and/or access new markets that require a produce safety plan.

This project built and expanded upon a previous SCBG grant to develop UVM Extension's "Practical Produce Safety Program" (PPS) – a produce safety curriculum targeting smaller-sized diversified farms. The funding for this project allowed us to bring the PPS workshops to new locations and the videos and factsheets provided new and needed educational information for Vermont's specialty crop growers.

PROJECT APPROACH

We conducted two series of workshops in the spring of 2014 and the spring of 2015. In spring of 2014 we conducted **four Practical Produce Safety workshops** in locations that had not been served before: Burlington, Newport, Rutland, Bennington. **Eighty-seven farmers and agricultural service providers** participated in these workshops**, increasing the number of farmers trained in writing produce safety plans from 90 to 177.** In the spring of 2015 we conducted **five Practical Produce Safety workshops** in other locations that had not yet been served: Swanton, Middlebury, St. Johnsbury, White River Junction and Poultney**. Sixtyfive farmers and agricultural service providers participated** in these workshops, **increasing the number of farmers trained in writing produce safety plans from 177 to 242.**

New materials, including four factsheets, were developed and incorporated into the Practical Produce Safety curricula materials for this workshop series: one on food testing labs, one on irrigation and produce safety, one on renovating old barns for better sanitation, and one on building open packsheds for better sanitation (see materials section).

In the fall of 2015 we conducted **the tenth workshop: "Demystifying Sanitizers for Produce Wash Water."** During the growing season of 2015 it became clear that there was a need among produce growers for more information and guidance on how to correctly use sanitizers in produce wash water. We partnered with UVM Extensions' Agricultural Engineer, the VTCAPS (VT Community Accredited Produce Safety) coordinator, and a horticulture and produce safety educator from Cornell Extension to design educational materials and a workshop where farmers and ag service providers could get direct hands-on experience mixing, measuring and testing chlorine and peroxyacetic-based sanitizers. **20**

farmers and agricultural service providers from Vermont and New Hampshire attended this workshop.

In addition to designing and conducting the sanitizer workshop, we created a new section on our webpage on using sanitizers in produce wash water. This included two new factsheets created by UVM Extension – one a general document on the correct usage of sanitizers and one on making dosers for small batches. There have been **191 downloads of documents** from the sanitizer section on the website since its creation in the summer of 2015.

In the **spring of 2015 we completed three videos on packshed construction and renovation** for produce safety and efficiency. The individual videos were posted on our website and have received **700 views** as of July, 2016. The importance and significance of good packshed design for produce safety was also featured on a **segment of a local television show:** "Across the Fence."

We were able to complete the above deliverables for less than the estimated costs in our initial grant proposal, so we requested a no-cost extension and leveraged the remaining funds with funds from USDA RMA and research funds to extend the reach of this project. We used the funds to create **seven case studies on packshed design** from different types of farms. The case studies will significantly enhance the value of this grant by providing growers with a greater level of detail on costs and how to accomplish specific changes than was possible in the videos. We also used the funds to purchase supplies: two digital thermometers for testing produce pulp and cooler temperatures, the three main peroxyacetic acid sanitizers used by produce growers in Vermont, and a mixed variety of brands of test strips for monitoring levels of peroxyacetic acid and chlorine so we can demonstrate to farmers how to use important produce safety tools during farm visits and workshops.

GOALS AND OUTCOMES ACHIEVED

This project had two performance targets:

1. **Increase the number of farms writing produce safety plans from 90 to 240.** We reached and surpassed this target. Participants in the Practical Produce Safety workshops write drafts of their produce safety plans during the workshop. **152 farmers and service providers** participated in the nine Practical Produce Safety Workshops**, increasing the numbers of farms writing produce safety plan from 90 to 242**
2. **Increase the number of farms implementing specific produce safety practices from 40 to 120.** We conducted an on-line survey of the people who had participated in the Centers Produce Safety Program and/or used its educational materials. There were 58 respondents. However although not all of the participants in the program responded to the survey, based on the 19 farms that USDA GAPs certified, and the 68 farms in the VT CAPs program, we are confident saying there **are at least 87 farms in Vermont that have implemented produce safety practices.**

Of the survey respondents who participated in the 2014 and 2015 Practical Produce Safety workshops, the table below gives the percentage of different practices implemented.

% IMPLEMENTED	PRODUCE SAFETY PRACTICE
83%	completed, revised or added to their produce safety plan
89%	changed handling or cleaning procedures for harvest or packing containers

72%	trained workers in on-farm produce safety practices
61%	installed a handwash station
65%	switched to triple washing or adding sanitizer to wash water
50%	improved record-keeping practices
44%	started or increased frequency of testing farm water quality
24%	changed manure handling practices
28%	changed irrigation practices

Completed three videos on packshed construction and renovation for produce safety and efficiency - 700 views

Additional "Stretch" Outcomes not in the initial proposal:

- A factsheet on **Food Testing Labs** – 10 downloads
- A factsheet on **How to Sample Irrigation Water** – 28 downloads
- A new section on our webpage on the **use of sanitizers in wash water** – 191 downloads
- A series of **seven factsheets on Packshed Design**, based on case studies with local farms (posted in June, 2016, too early to report on downloads)

BENEFICIARIES AND ECONOMIC IMPACT

At least **152 farmers** in Vermont benefitted from participating in the 10 in-person workshops. The vast majority of participants were operators of small-scale diversified vegetable farms.

While we do not have a strategy in place to identify who views information on our website, **there were over 929 views or downloads of the new educational materials** from the Centers Produce Safety Resource website, and we assume that the majority of the viewers were probably farmers or agricultural service providers in Vermont and the Northeast. We have shared the information in the videos and factsheets with at least 10 farms that are in the process of either making improvements to existing packsheds or building new packsheds.

In a survey of all the participants of the Center's GAPs programs, 33% of respondents reported that having completed GAPs certification or having a written Produce Safety Plan has allowed them to maintain existing markets or opened up new markets. Of these markets, 39% are retail markets, 48 % are wholesale markets, 26% institutional markets (schools, hospitals, day care center, etc...) and 17% other types of markets.

Fifty-six percent of the respondents believed the principles and practices learned from Extensions' Produce Safety Program have resulted in increased efficiencies on their farms. Of this 56%, 38% estimate the dollar value of the increased efficiencies to be between $1,000 - $4,999. Their comments reveal how produce safety training and educational have improved efficiencies in these ways:

- *"We built a packhouse and installed a veggie washer, reducing labor costs for washing and handling. Also streamlined our record-keeping, tracking harvest dates and quantities better."*
- *"We built a new wash station which has dramatically increased not only our efficiency but quality of produce."*

- *"Just knowing the best practices has helped me to better organize washing and processing of produce and given me information to plan for future investments in infrastructure."*

LESSONS LEARNED

As farms are becoming increasingly aware of and seeking to implement good agricultural and produce safety practices, there is a clear need for both good information on packshed design and processing equipment (such as efficient and safe ways to wash and dry large quantities of leafy greens); and for funding to help farmers make improvements to the state's aging infrastructure.

There is also a great need for: 1) better technologies for measuring sanitizer in produce processing water (test strips are not only an inefficient tool in terms of time, but there is huge discrepancy in terms of test strip results from one lot number to another), and 2) more educational resources on how to best monitor sanitizer levels in processing water.

CONTACT PERSON

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ADDITIONAL INFORMATION – MATERIALS CREATED

PACKSHED VIDEOS

Packshed Design: Building a small open produce packshed with the beginning farmers at Flywheel Farm
Packshed Design: Renovating an old dairy barn for use as a packshed on the certified organic High Meadows Farm.
Packshed Design: Expanding to accommodate business growth in the diversified operation at Jericho Settlers Farm.

FACTSHEETS

Bella Farm: An Open Packshed as an Effective Low-Cost Temporary Solution for a Beginning Farm
Flywheel Farm: A Mobile Packshed for Leased Land
Gildrien Farm: Innovative Best Practices for an Existing Open Packshed
Lewis Creek Farm: Getting a Dairy Barn Ready for GAPs (Good Agricultural Practices) Certification
High Meadows Farm: Turning an Old Dairy Barn into a Warm and Sunny Year-Round Packshed
Edgewater Farm: An Open Packshed for Efficiency and FSMA Compliance
Jericho Settlers Farm: Building a New Packshed for a Growing Business
Building an Open Packshed
Renovating Old Barns for Efficiency and Produce Safety
Food Safety Testing Labs
How to Take Water Samples for Irrigation Water

WEBPAGE: SANITIZER SECTION

Project 4: Spotted Wing Drosophila Exclusion Study – Final Report (Previously Accepted)

PROJECT SUMMARY

Spotted Wing Drosophila was first found in the continental US in 2008. It is now present in 35 states in the US, in addition to many European countries (Burrack, Smith, Pfeiffer, Koeher, & Laforest, 2012; Cini, Ioriatti, & Anfora, 2012). The pest arrived in Vermont and all other northeastern states in 2011 (Burrack et al., 2012). SWD is attracted to a number of commercial crops, including apples, blackberries, blueberries, cherries, grapes, peaches, pears, plums, raspberries and strawberries. Depending on crop and location, economic losses associated with SWD on the West Coast of the US ranged from 0-80% in 2009 (Bolda, Goodhue, & Zalom, 2010). We anticipated that the 2014 growing season would have record damages associated with SWD, though in fact the damage from SWD was lighter than previous years since its arrival. It is unclear at this point what determines the population dynamics of SWD, this being an underdeveloped area of research in the Northeast and other parts of the United States.

Organic growers are at a distinct disadvantage for managing SWD, and could face near total losses for late summer and fall crops such as late season blueberries and raspberries. For conventional growers, there are three categories of pesticide controls effective against *D. suzukii*. (Bruck et al., 2011) but there is only one class of organically approved pesticides proved effective against SWD (Beers, Van Steenwyk, Shearer, Coates, & Grant, 2011). This class, spinosads, is limited both by caps on the amount the manufacturer recommends using in one growing season and the lack of effective alternatives to use in order to avoid developing resistance among the *D. suzukii* population. Non-chemical control methods have the potential to limit the amount of chemical applications on blueberry and raspberry crops, thereby increasing farm profitability and protecting worker health and biodiversity.

Our research looked at insect netting as a potential physical control of SWD in organic blueberry and raspberry crops. We believed that, in combination with other management techniques, insect netting could provide a viable approach for limiting the damage caused by this damaging new pest. Specifically, we sought to understand if different types of netting had different rates of efficacy, if netting significantly altered the temperature near the plants in field and hoop house settings, and if netting was an economically viable alternative to pesticides. We chose to test two types of netting: Proteknet 80 and Proteknet 60, both sourced from Dubois Agrinovation in Quebec. We chose these nets based on research conducted in Japan that indicated that SWD (in that area) were 0.70 - 0.94mm (males) 0.85 - 1.24mm (females) (Kawase, 2005). That study showed that screen openings of 1mm effectively excluded SWD, while screens with openings of .98mm or less totally excluded SWD. We were not sure, prior to our research, that SWD in the United States were morphologically identical to those studied by Kawase, and therefore felt that there was value to testing netting in US populations of the insect. We also believe that farmer management of netting is an important factor in netting effectiveness, which is why we chose to conduct these trials on farms.

PROJECT APPROACH

We conducted our research on two farms in northeastern Vermont: Adam's Berry Farm (ABF) in Charlotte and Waterman's Berry Farm (WBF) in Johnson. The sites were approximately 60 miles apart. At both farms, we set up netting enclosures around individual blueberry plants (sampling unit = one

blueberry bush.) The variety at both sites was Patriot, an early fruiting variety. At ABF we enclosed 36 bushes and at WBF we enclosed nine bushes for a total of 45 bushes. We installed four wooden stakes (7' each) around each bush over which we draped the insect netting, gathering the netting at the base and weighting the netting with bags of rocks. Netting that was not wide enough to cover an entire bush was sewed with white polyester thread. Gaps in the netting were closed using safety pins. We applied equal numbers of four treatments: (a) control with only support posts, (b) support posts with a partial covering of Proteknet 80, (c) support posts with complete cover of Proteknet 80, and (d) support posts with complete cover of Proteknet 60. The Proteknet 80 and Proteknet 60 are both high-density polyethylene nets with small holes (1x.85mm and 1.9x.95mm respectively), and high levels of light transmission. Sampling in the Patriot blueberries started in early July and concluded in late August, 2014.

We also conducted tests in raspberries at the ABF site only. ABF recently constructed six hoop houses at this site, which were located in the same general area of the farm. Three tunnels were enclosed in Proteknet 80 and three were not. We treated each hoop house as a sample, due to the difficulty in isolating individual raspberry plants. Though we initially wanted to sample branches of raspberry bushes, the farmer who hosted this project was adverse to the idea. He believed that the traps would attract an additional number of SWD to his crop. Later in the season, he decided that our traps were not as attractive to SWD as his raspberries, therefore trapping would pose no additional threat. At this point in the season, however, we were not equipped to sample more than the six hoop houses. Sampling in the raspberries started in late August and concluded in early October, 2014. Key findings in our results were:

- Exclusion netting can be used in combination with good sanitation practices to control SWD in commercial raspberry production.
- Exclusion netting is effective at lowering populations of SWD in and around commercial raspberry crops.
- Our research suggests that there is an unequal sex distribution of SWD inside netted plantings, with a higher concentration of female SWD found inside the nets. This area should be further researched.

Research results are described in greater detail in the following sections (reports on project objectives) and in the research brief included as an appendix to this report.

GOALS & OUTCOMES ACHIEVED

Objective 1: Identify which netting has the greatest impact on protecting soft fruit from SWD

1A: Test for larvae presence

We started testing for larvae after the first date that adults had been observed in red traps in blueberries and raspberries. We first randomly collect 30 healthy, undamaged berries from each plant sample and placed them in a ziploc bag. These were taken back to the lab, where we mixed a salt solution of 1/4 c salt and 4 c water, lightly crushing the berries in the bag with the salt solution. After allowing the fruit to sink to the bottom of the bag (10-15 min), we counted the larvae that floated to the top (Liburd & Iglesias, 2013). This test was performed weekly.

Because there were low levels of adult presence in traps (see performance measure 1b), we did not begin sampling for larvae in the blueberries until the very end of the trial. We found few larvae in the

blueberries. There were not enough to make any statistically sound conclusions about the difference between treatments. We also sampled fruit in raspberries weekly. There were far fewer larvae in the berries collected in the houses protected with netting than in the houses without netting, however there were confounding variables: (1) two houses without netting did not have fruiting berries during the period of sampling (one did), and (2) the farmer let us know at the end of the trial that he was rigorous about picking clean the bushes in the netted houses, meaning the single house with berries that was not netted would be more attractive to SWD. This study should be followed up with another test in raspberries that can confirm our findings.

1B: Test for insect population change

We set out traps for adult SWD when netting trellises were completed, just prior to blueberries being ripe. Our traps followed Extension guidelines (Liburd & Iglesias, 2013), and were constructed from red plastic cups with clear caps, encircled with a ring of black electrical tape with small holes punched around the top. The color scheme has been shown to be highly attractive to SWD (Cowles, pers. comm.) Inside the cups were secondary vials, covered with a small piece of window screen secured with a rubber band.

Traps were baited with a yeast and sugar mixture (Liburd & Iglesias, 2013), to which whole wheat flour and apple cider vinegar have been added to increase attractiveness (Cowles, pers. comm.) This was placed in the secondary vial. (The yeast bait recipe (yields 1/4c): 1 T yeast, 4 T white sugar, 4 T whole wheat flour, 3 tsp apple cider vinegar, 1.5 C water.) The traps will required approximately 1.5 to 2 inches (150 ml) of bait in the bottom of the cup. In the red cup (outside of the vial) we poured a mixture of apple cider vinegar (90%) an ethanol (10%) as a "kill liquid". Two drops of odorless dish soap were added to the bait to break the surface tension, and increase the likelihood that flies were trapped. Traps were monitored and the bait refreshed once per week. Samples were taken back to the lab and counted and sexed weekly. When counts exceeded 200 individuals per trap (male and female), counting was stopped for that trap.

We concluded trapping after the last harvest of Patriot blueberries at our sites.

Trap Counts

Because the population loads were so low in the early part of the summer of 2014, we did not get enough adult SWD in traps in the Patriot blueberries to draw any valuable conclusions about the efficacy of the treatments. However, we were able to compare dates of first detection for three years (2012-2014) and dates of peak populations in traps using data from preliminary studies (see table 1). These comparisons show that both the arrival of SWD in northern Vermont and the date of peak population were later in 2014 than in 2013.

Table 1: Adult SWD presence in blueberries and raspberries in Vermont, 2012-2014

	Date of first detection		Date of peak population in traps	
Year	Northern VT site	Southern VT site	Northern VT site	Southern VT site
2012		August 1*		
2013	July 2**	June 15**	September 12**	August 18**
2014	August 4**		October 7**	

* (Grubinger and Smith 2014)

** Unpublished study, Grubinger, Schattman & Izzo

After the Patriot blueberries finished fruiting, we continued trapping for eight weeks in the summer in six raspberry plantings. When counting adults caught in the traps, we separated based on sex. When trap counts were summed across dates, we found there were significantly more SWD in traps in un-netted high tunnels ($t(4)=.0187$) even though there were fewer raspberries on those bushes (only one out of three high tunnels had fruit bearing plants during the period of sampling). (See appendix, figure 1.) We also found that the ratio of female to male SWD was close to equal in the un-netted traps, but that there were significantly more females in the netted traps ($t(4)=.0157$). (See appendix, figures 2 and 3.)

In addition, we found that there was more variation in the number of SWD caught in traps outside of the netting structure (see figure 4). In other words, all three traps inside the netted raspberry plantings had similar numbers of adults, while traps in the control tunnels (un-netted) had a much larger spread of individuals. The traps in the netted plantings also had a fairly consistent number of individuals caught week to week, while the control (un-netted) traps fluctuated more. These findings should be further explored in a study with a larger number of samples.

Temperature

To analyze the data, we conducted paired T-tests between the control temperatures and each of the treatments. There was no significant difference between the temperature next to the blueberry plants in the partial control and the control treatments ($t(998)=.92$), while the Proteknet 80 and Proteknet 60 both significantly changed the temperature next to the blueberry plants ($t(998)=.0045$ and $t(998)=.0011$ respectively.) Though these differences are significant, they likely do not influence blueberry ripening or yield: the average temperature difference between Proteknet80 covered bushes and the control bushes was 13.6˚F, while the average difference between Proteknet80 covered bushes and the control bushes was only 1.2˚F.

Whether these temperature differences impact plant development or fruit set is not immediately obvious. There are several critical temperatures that affect blueberry development. These are mostly related to bud production, flower development and overall plant reproduction. When blueberries are in full bloom, temperatures below 32˚F can cause significant yield loss (Michigan State University 2012), but because netting would typically be put on after fruit set (but before ripening) this has little or no relevance to growers who are trying to control SWD. Research done on polyethylene covers show blueberry ripening can be accelerated by up to a month (Baptista et al. 2006), but no studies to our knowledge examine how temperature under netting does or does not impact blueberry yield or quality.

While we did not collect temperature data in the raspberry high tunnels, it is worth noting that covering raspberries in this manner is often used to both extend the season, with elevated temperatures reported as influencing both ripening time and yield (Strik 2012; Carew et al. 2003) and to protect against rainfall

on fruit (which limits shelf-life and harvesting days.) Historical research finds no difference between polyethylene covers on raspberries and cane growth or node development, though both soil and air temperatures are higher under these treatments (Nonecke and Taber 1989). It should be noted that in the Nonecke and Taber's study, both the control and treatments were within the temperature range for optimal growth for raspberries (Strik 2012). More recently, however, Carew et al. (2003) have reported that temperatures up to 24˚C (75˚F) increase yields in raspberries, while temperatures above this level can diminish yield. Strik (2012) also reported that light transmission has an effect on harvest time, which is something that should be taken under consideration in light-diminishing netting systems. Light transmission of Proteknet80 is 83% (Link 2014).

Humidity was not measured in our study, but is of critical importance in raspberry high tunnel production. By netting the tunnels, airflow is reduced and control of excess humidity becomes a challenge, which can increase the conditions favorable for fungal disease. An increase in fungal disease pressure means that growers will have to utilize additional strategies for protecting their crops: removing netting as soon as harvest is concluded for the year, attentive pruning, and judicious spraying are potentially useful strategies. Some fungal diseases of which growers should be aware are *Botrytis cinerea* (Botrytis fruit rot and cane botrytis or grey mold wilt), *Leptosphaeria coniothyrium* (cane blight), and *Didymella applanta* (spur blight) (Heidenreich et al. 2012).

Objective 2: Determine impact of netting on crop yield and quality

2A: Earliest and latest harvest dates under four types of management

We collected earliest and latest harvest dates from our farm partners. There was no difference between treatments.

2B: Yield

Our original research proposal included measuring yield of fruit bushes to determine differences between treatments. After consulting with both farmers and colleagues at UVM, we determined that there was too much variation between our host sites and bush varieties for this information to be meaningful. Not all the blueberry bushes in our sample were equally developed, of equal size, or were thought to yield similarly independently of our treatments. In a review of the literature, we have found research comparing blueberry plants to themselves, but never to one another. Instead, we will seek research in already published literature that discusses the relationship between yield and fruit infestation to include in our outreach materials.

Objective 3: Create a cost/benefit tool to help farmers make informed decisions about managing SWD

3A: Enterprise analysis

Though the cost of managing SWD will be different for every farm, we attempted to forecast the costs (beyond a business as usual scenario) of four management strategies: (a) using conventional sprays, (b) using sprays approved for use on organic farms, (c) exclusion netting, and (d) sanitation (picking clean and solarizing infected fruit.) While it is difficult to compare the costs of using exclusion netting and sanitation to organic or conventional spray regimens, we attempted to detail some costs that growers can expect associated with each management strategy.

The cost of netting an acre of berry plants is significant in the year that the trellising system is installed and netting is purchased. According to McDermott (2014), netting one acres of blueberries can average around $10,000, with a lifespan of seven years (amortized cost = $1,428/year not including labor.) We estimate that, including labor paid $15/hour (not including tax withholdings), a system would cost $10,675 per acre (see tables 2 and 3). Two expenses included in this projection merit special explanations: first, when considering covering large areas (not using high tunnel structures) sewing the netting can be a significant expense. Growers can sew the fabric themselves if they have a sewing machine (care should be taken to use a polyester thread which will not degrade as quickly as cotton), or some companies that sell netting will join pieces together for a fee. Sewing a piece of netting that would cover a quarter acre (328 square feet, 40 ft wide x 328 ft) could cost $400, so it would cost $1600 for four sections to cover one acre. In addition, some suppliers will supply growers with designs for entrance/exit vestibules to netting systems, which can reduce the number of flies that can reach the crop during normal maintenance and harvest activities.

Second, for growers who use netting to enclose high tunnels instead of constructing a trellising system, the cost of netting will be lower (since plastic covering the tunnels will reduce the square footage of netting required to enclose the plantings), though the cost of a tunnel will be much greater than that of trellising supplies. Heidenreich et al. (2012) estimate that a multi-bay high tunnel for raspberry production will cost around $34,000. Despite the higher cost of high tunnels covered in plastic, these structures carry several other benefits besides protection from SWD, including easier harvesting, better fruit quality, and reduced disease pressure.

Table 2: Upfront and amortized costs of netting systems

	Upfront cost	Amortized over 10 years	Amortized over 7 years
Blueberry trellising system (1 acre) with netting (field)	$10,675	$1,068	$1,525
Raspberry high tunnel system with netting (3 bay)	$50,000	$5,000	$7,142

The cost of building a trellised netting structure or a multi-bay high tunnel is higher than yearly pesticide use, even when amortized over seven years and with labor costs included. Table 3 shows spray rates were based upon recommendations published by the University of Massachusetts Amherst (2015). We estimate that growers who choose to spray will need to do so six times per season. Based on our summary of the cost per acre of the 12 sprays listed, we estimate that growers using organic sprays can expect to spend $456 in insecticides per acre per year (applying six sprays a year and rotating between IRAC classes). Conventional growers can expect to pay between $73-$538 per acre per year, if they alternate applications in different insecticide resistance action committee (IRAC) classes. For organic and conventional growers alike, a high quality boom sprayer is needed for effective application of insecticides. As shown in table 3, a $15,000 new sprayer amortized over 15 years has a yearly cost of $867.

For a summary of efficacy of different sprays, see Loeb et al. (2013) or Isaacs (2013). It should be noted that this analysis does not place any monetary value on ecological or human health costs associated with pesticide use, which some argue should be considered in any economic analysis (Wilson and Tisdell 2001). We suggest that the ecological and human costs of heavy pesticide use should be considered by growers seeking to control SWD with sprays.

Table 3: Pesticide control for SWD (price per maximum application allowed per acre)

Brand name, application rate per acre, (days till re-entry)(*IRAC class*)	Organic sprays, price per acre	Conventional sprays, price per acre	Price in typical units sold	Efficacy
Assail 30 SG 4.0-6.9 oz (1) (*4A)*		$53	$350/4lbs	2 out of 4↕
Asana XL, 4.8-9.6 0z (14) (*3)* ‡		$5	$67/G	4 out of 4↕
Bifenture 10DF, 5.3-16.0 oz (1) (*3*) ‡		$28	$27.61/lb	2 out of 4↕
Brigade WSB, 5.3-16.0 oz (1)(*3*) ‡		$25	$62.50/2.5lbs	Excellent†
Danitol 2.4EC, 10.6 oz (3)(*3*) ‡		$20	$221.61/G	Excellent†
Delegate WG, 3-6 oz (3)(*5*)		$72	$12.03/oz	Excellent†
Exirel, 13.5-20.5 oz (3)(*28*)		$126	$739.41/G	4 out of 4↕
Imidan 70 W, 1 1/3 lb (3)(*1B*)		$19	$71.95/5lbs	Excellent†
Lannate 90, 0.5 - 1 lb (3)(*1A*) ‡		$43	$43.06/lb	4 out of 4↕
Mustang Max, 4.0 oz (1)(*3*) ‡		$7	$209.45/G	Excellent†
Entrust, 1.25-2 oz (3)(*5*) (OMRI)	$27		$400/Qt	Good - Excellent†
Pyganic 1.4, 1-4 pints (0)(*3A*) (OMRI)	$125		$250/G	Fair - Poor†

Labor required for each approach varies (see appendix, table 4). While spraying may already be a part of growers' activities, both sanitation and netting requires additional hours. Sanitation involves regular and frequent harvests, taking all ripe berries off of the bushes, and separation of infected from uninfected fruit. Infected fruit are placed in clear plastic bags and left in the sun, where excessive heat destroys SWD larvae. One grower in our study estimated that sanitation practices required an extra hour of effort for every five hours of harvest. Construction of trellis systems of high tunnels is highly labor intensive in year one, but installing and removing netting on a yearly basis requires fewer hours, which vary depending on the trellising system.

It would be useful to grower to know what potential crop losses they face under each management strategy. Unfortunately, a comprehensive review has not yet been completed. Estimates from Cornell Cooperative Extension state that growers could experience 30-50% loss in mid-season blueberries and 70% loss in late-season raspberries if no action is taken to protect crops (Cornell University 2012). A grower in our study estimated that sanitation practices reduced loss in his late-season raspberries of 30%, but this is unconfirmed. Our work confirms that use of exclusion netting reduces adult populations of SWD in and around berry plantings, but did not result in a difference in marketable yield.

Objective 4: Provide Vermont growers with timely and useful information to help them make effective management decisions

4a: Producer outreach

We applied and were approved to present our findings at two grower events: (1) The Vermont Vegetable and Berry Growers Association Annual Meeting (January 2015, ~200 attendees at our session) and (2) the

Northeastern Organic Farming Association of Vermont Winter Conference (February 2015, ~12 attendees at our session.)

Of the attendee feedback forms that were handed back to us, six respondents were not commercial growers, eight were commercial growers. Two attendees reported no increase in knowledge, eleven attendees reported an increase in knowledge. When commercial growers were asked if they would do anything differently on their farms after attending the workshops, they wrote:

- "This will assist us in putting our SWD plan in place. Great info, thanks!"
- "I've been thinking about reducing the size of my fall crop and netting."
- "Use netting described."
- "Yes, focus on raspberries."

We have completed one outreach document about netting trellis design, which is included as an appendix to this report, and is available at http://www.uvm.edu/vtvegandberry/SWD/SWDNettingFrameFactsheet.pdf.

We produced a research brief detailing this project as well. The research brief is also included as an appendix to this report, and is available at http://www.uvm.edu/~agroecol/ARLG3_SWD.pdf.

BENEFICIARIES

The beneficiaries of this research are farmers of blueberries, raspberries and other fruits susceptible to spotted wing drosophila. Specifically, growers in the northeast who use low spray or organic approaches to SWD management can use the findings of our study to inform their farm management strategies. As described in our report on project objectives, we reached growers through a variety of methods:

Conferences presentations: We set a goal of attending two grower conferences to share our results, which we achieved. As previously stated, we applied to and were accepted to present at (1) The Vermont Vegetable and Berry Growers Association Annual Meeting (January 2015, ~200 attendees at our session) and (2) the Northeastern Organic Farming Association of Vermont Winter Conference (February 2015, ~12 attendees at our session.)

Updates to the Vermont Vegetable and Berry Growers Association: We posted updates about our project and shared our final research brief on the Vermont Vegetable and Berry Growers Association listserve, a highly active on-line forum for growers in Vermont and neighboring states. There are 450 members on the listerve.

LESSONS LEARNED

Though this project has thus far been successful in showing that exclusion netting is an important management SWD strategy for organic growers of Vermont blueberries and raspberries, there were several factors that required us to adjust our research strategy and limited the statistical significance of our results.

First, we noticed that this year, **the SWD population did not build as quickly as in 2013** (when we did our preliminary sampling on three Vermont farms.) Adult SWD found in traps were noticeably fewer,

though the same traps and bait were used in both 2013 and 2014. Variables that may have been responsible include (1) a very cold winter prior to the 2014 growing season (which may have influenced the strength of the overwintering population of SWD and therefore the summer populations as well); (2) the amount of rain in the early part of the season differed between the two years, with 2013 having noticeably higher total rainfall in June; and (3) site differences (windy versus protected locations). We have confirmation from researchers in Minnesota[3] that they also caught fewer adults in their traps this year, leading us to believe that what we *don't* know about SWD and this specie's lifecycle is still considerable. The literature review included in our research brief (attached in the appendix) spends some time on factors that are likely to influence SWD population dynamics. The light population in 2014 impacted our study because we caught too few adults in our first crop (blueberries) to make any claims that were statistically significant about differences between different types of netting. However, we were able to collect valuable data about temperature and humidity under different netting treatments, which will provide useful information for growers.

Second, our study sites included a pick-your-own operation. **At the pick-your-own site, customers (and sometimes staff) would disrupt the netting and/or spill traps.** Any sample disrupted by either/both of these events was eliminated from our data, further limiting our sample size and our ability to determine statistically significant differences between the blueberry netting treatments. We worked with the host farmer to put up signs explaining to customers the purpose of our study and to encourage them to pick only from bushes not enclosed by netting. If the project were to be replicated in the future, we recommend that trapping happen only in areas that are off limits to PYO customers, and that farm staff be thoroughly trained at the beginning of the project.

Third, our original research proposal included measuring yield of fruit bushes to determine differences between treatments. After consulting with both farmers and colleagues at UVM, we determined that there was **too much variation between our host sites and bush varieties** for this information to be meaningful. Instead, we will seek research in already published literature that discusses the relationship between yield and fruit infestation to include in our outreach materials. We attempted to compensate for this shortcoming in our study design by collecting addition data (temperature) that could inform crop management.

Fourth, we moved to sampling raspberries late in the season at both a grower's request and because we had very little data from our blueberry samples. While the SWD adult and larva populations were much higher during our raspberry sampling period, our sample size was very low. We sampled in six high-tunnels: three that were conjoined and covered in insect netting, and three that were open. Unlike blueberries, it is very **difficult to isolate raspberry plants**. Therefore we could not include as many samples in this part of our study. We should note that the grower who invited us to sample the raspberries in late summer had expressed that he did *not* want us to sample there in early summer because he was concerned that putting traps in the high-tunnels would attract SWD to the raspberries. He changed his mind when he saw that SWD would be attracted to his crop whether our traps were there or not. Had we received more advanced notice that we could sample in the high-tunnels, it is likely that we could have done a more thorough job of data collection in this setting. While there were noticeable differences between the two treatments (netted and un-netted houses), it is unlikely that we will be able to establish statistical significance. Instead, we hope that our work will either confirm the findings of

[3] A SARE project similar to ours, but including OMRI approved pesticides: http://mysare.sare.org/mySARE/ProjectReport.aspx?do=viewRept&pn=FNC14-948&y=2014&t=0

future netting studies to be conducted by our colleagues in Minnesota, or lay the groundwork for a larger study in the northeastern United States.

Unfortunately, we believe that the data is insufficient for us to complete a publication likely to be accepted by a peer-reviewed journal. Despite this, we feel that our efforts uncovered important questions about SWD population dynamics and the implication of these dynamics for northeastern growers, which should be further considered in lab and field settings. In an effort to share our process and findings with the academic community, we have posted our research brief to both Google Scholar and Research Gate, where it has already been viewed and downloaded by colleagues at other research institutions.

Despite these drawbacks, we believe that this research will be very useful to Vermont growers, especially when combined with the enterprise analysis component of the work. Though the research did not yield the results we were expecting due to environmental factors, we believe that it has been valuable and has given the grower community the chance to think about the challenge of managing SWD in a new way. Our findings have also been corroborated by similar small scale trials in New York[4] and Minnesota, both funded by USDA-SARE. The most interesting and unique finding in our study is the unequal distribution of male and female SWD in the raspberry high tunnels. We believe that there is more research to be done on this topic, and to our knowledge there are no other groups working on this specific topic.

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ADDITIONAL INFORMATION

Appendix – Figures

Figure 1: Combined male and female SWD population by treatment in raspberry plantings

[4] Project report not yet posted, but the investigator has shared her results in other forums: http://mysare.sare.org/mySARE/ProjectReport.aspx?do=viewProj&pn=FNE14-813

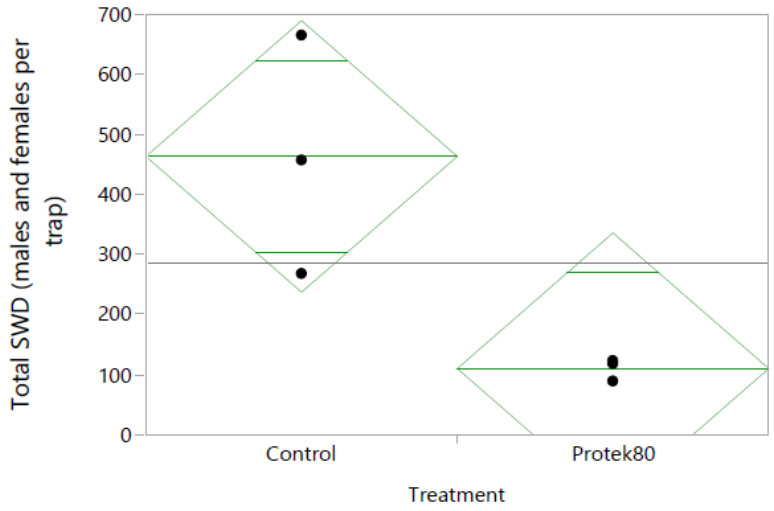

Figure 2: Ratio of female to male SWD over time in raspberry plantings

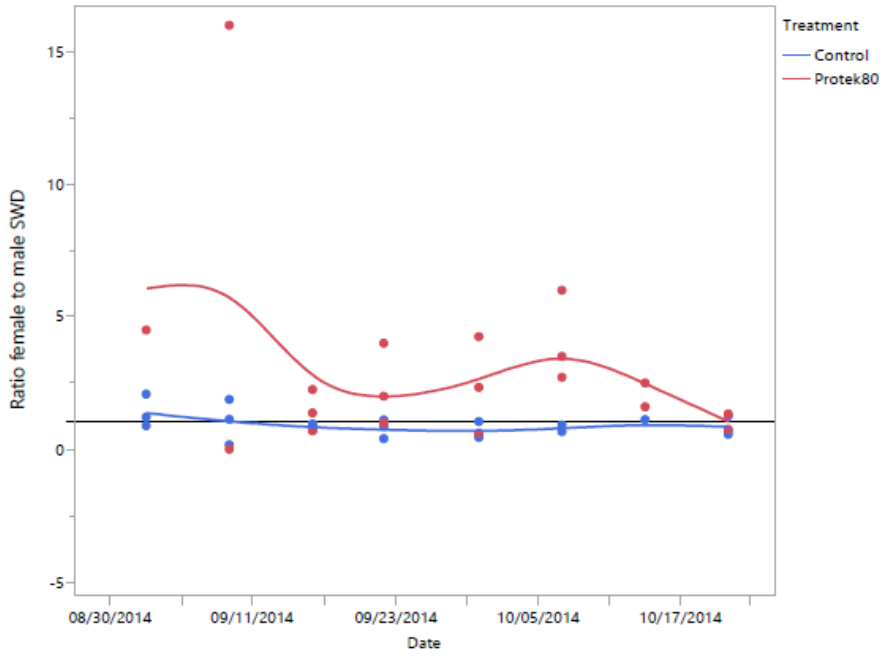

Figure 3: Ratio of female to male SWD per trap by treatment in raspberry plantings

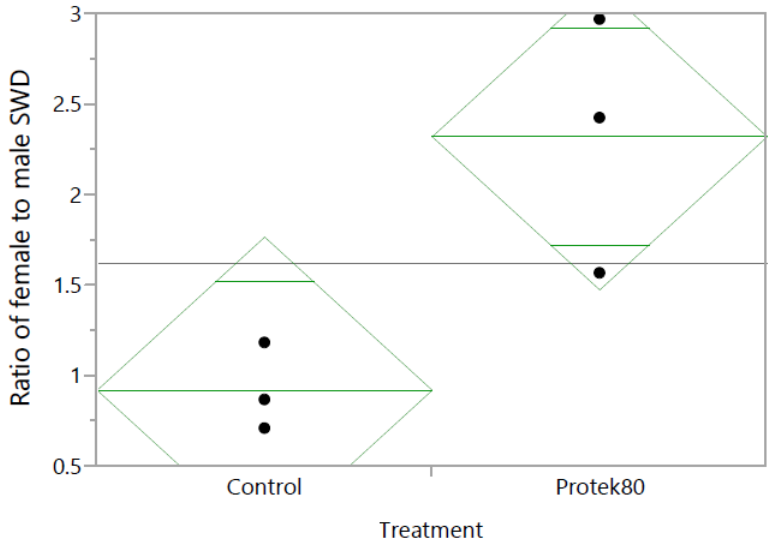

Figure 4: Variation of trap counts by treatment in raspberry plantings

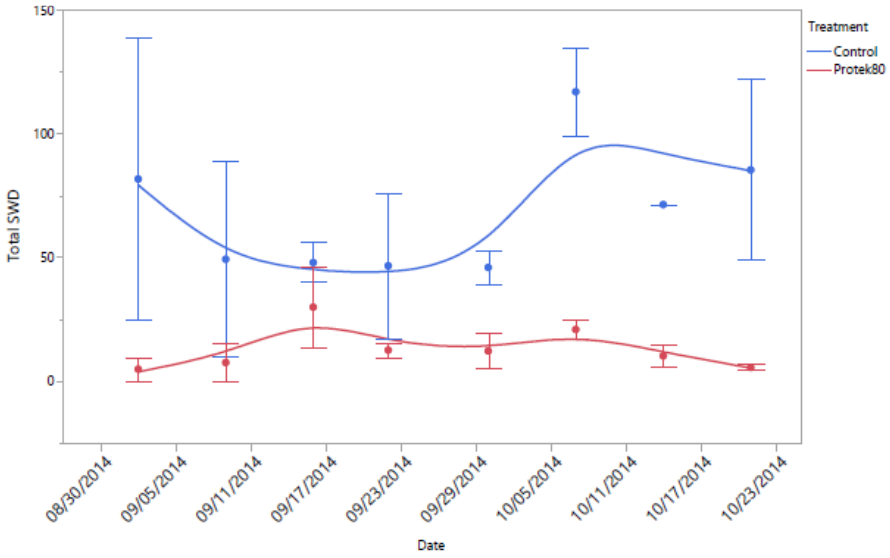

Figure 5: Temperature differences between Proteknet60 and control in blueberry plantings

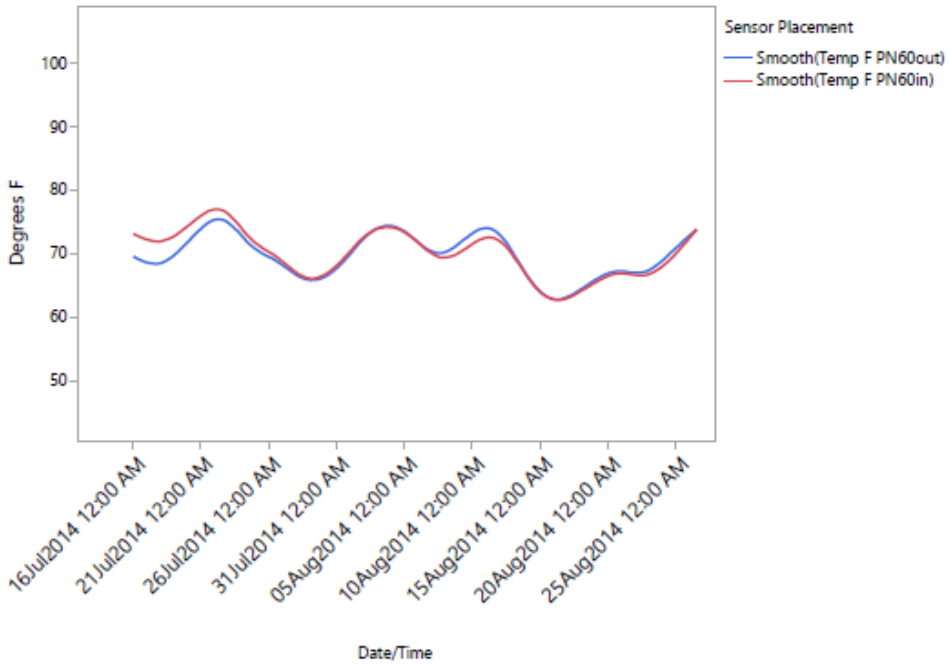

Figure 6: Temperature differences between Proteknet80 and control in blueberry plantings

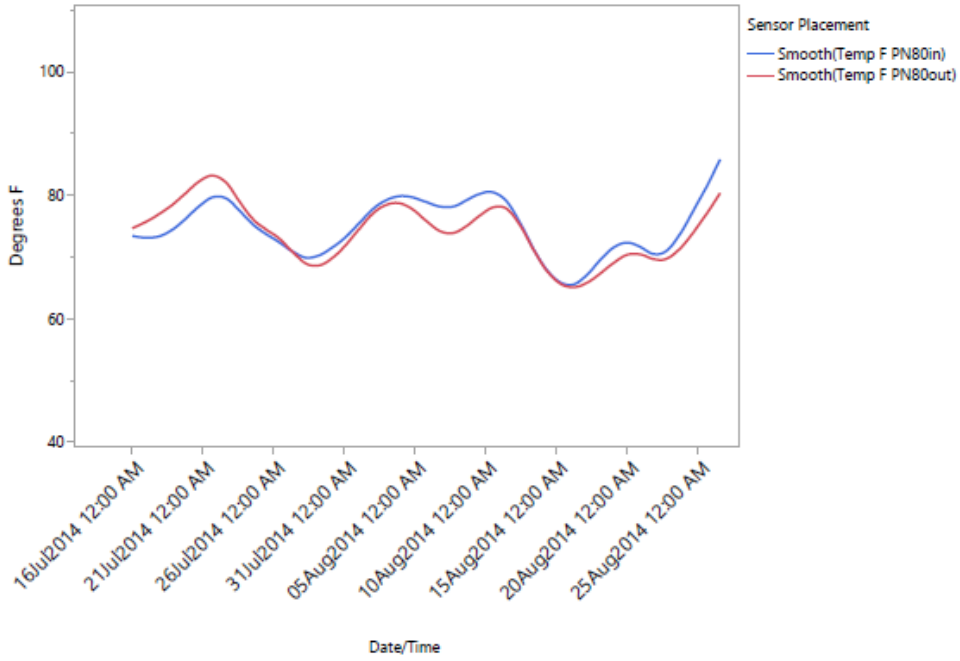

Table 4: Costs for managing SWD in blueberries

		Organic spray regimen	Conventional spray regimen	Sanitation	Netting	Notes
Labor						
	One time				30 hours to construct and install trellis + 8 hrs to sew netting together = 38 hrs	Netting sewing services provided by netting resellers for approximately $1600/acre, or growers can do it themselves if they have a sewing machine.
	Yearly	1 hr/application x 6 applications = 6 hrs; Interior pruning to remove SWD habitat and better spray penetration = 5 hrs per acre.	1 hr/application x 6 applications = 6 hrs; Interior pruning to remove SWD habitat and better spray penetration = 5 hrs per acre.	Sanitation harvests require 1 additional hour for every 5 hrs of harvest (estimated)	3 hrs to install and remove netting (pre-and post-harvest).	Extra labor in a spray regime = spraying every 5 days; extra labor in a sanitation regimen = clean harvest, fruit sorting + solarizing contaminated fruit.
Capital Expenses						
	Airblast sprayer (new)	$13,000	$13,000			New, estimated life is 15 years, estimated use is 99 hours/year (source is Oregon State Economic Analysis and the American Society of Agricultural Engineers), operating cost per hours = $8.75
Supplies						

	Trellis supplies	$0	$0		$1,700	Trellises based on the large box design by Hannah Lee Link, 2015. Available at http://www.uvm.edu/vtvegandberry/SWD/SWDNettingFrameFactsheet.pdf. Cost estimated based on Oregon State estimates: two wire, wooden end post, metal in-row post. Estimated life expectancy = 20 yrs.
	Netting	$0	$0		$7,315	Proteknet 80, 13x328' x 11 rolls @$665/roll. Sewing required.
	Heavy duty ground staples (12")	$0	$0		$1,090	$1.09 each x 1000
	Other	$0	$0	$50		Clear plastic bags for solarizing infected fruit.

Project 5: Improved Technical Support Programming for Vermont Apple Growers – Final Report (Previously Accepted)

PROJECT SUMMARY

Changes in orchard planting densities, tree training systems, apple varieties, markets, and pest management strategies require that Vermont apple growers have access to scientifically accurate and timely information in order to address biological and weather-related conditions in orchards. This project was proposed to develop a comprehensive communications platform for dissemination of horticultural, pest management, and risk management information to Vermont apple growers through redesign of the University of Vermont (UVM) Apple Program website (orchard.uvm.edu). This redesign was necessary to adapt the site for modern computer and mobile platforms and incorporate an interactive grower email list and blog formats that could facilitate improved access to site content and collaboration between growers and researchers. The site and its associated components (email Listservs® and blog) serves as the primary means of content delivery for present and future projects of the UVM Apple Program, and serves as an important infrastructure component for growers to access production-related information that enhances farm profitability and sustainability.

Apples are an important specialty crop in Vermont, with 2800 acres of orchards, average farmgate sales of $12 million annually, and an estimated $20 million in total value to the Vermont agricultural economy [1]. At a March 2013 Strategic Planning Summit for apple growers and industry support organizations, growers identified a need for improved access to production information and other program support (i.e. business planning, risk management, food safety, etc.). At that meeting, growers also identified difficulty with accessing information from other UVM Extension providers, including information on business management, food safety, and farm equipment and infrastructure engineering. A 2013 evaluation by Vermont apple growers of the UVM Orchard website, developed in the early 1990's with no significant site upgrade performed since then, found that 64% of growers access the site, but 57% rated the site usefulness as 3 or lower (1= not useful, 5= very useful) [2]. Improved information delivery and adoption of orchard practices such as: improved pest management programs and establishment of higher-value orchards with modern methods and new apple varieties will increase farm profitability and sustainability while managing risks to the operation. In addition, this project provides links to information from other service providers that support Vermont apple growers to serve as a clearinghouse for available technical and business support programs. This project builds on decades of support provided by the UVM Apple Program to growers, but seeks to improve usefulness and timeliness of information through adoption of modern delivery methods.

Information provided through the UVM Apple Program addresses many of the goals of the Vermont Farm to Plate Strategic Plan, including improved management of farm inputs, including pest management materials, nutrients, and energy inputs that reduce risk and improve farm profitability; support for diverse farm scales, including retail and wholesale operations; undergraduate and graduate student training on food production issues; and workforce training and technical development programming [3]. Topical materials published by the UVM Apple Program specifically address the following goals and funding priorities identified by the Vermont Agency of Agriculture, Food and Markets (VAAFM) for 2013: farm profitability; statewide economic impact (commercial apple orchards are located in 13 of 14 Vermont counties); sustainability; organizational development (through collaboration with Vermont Tree Fruit Growers Association (VTFGA) and partners in other areas of UVM Extension including Risk Management Agency, Center for Sustainable Agriculture, and Community Development and Applied Economics); food

safety; pest and disease management; and productivity enhancement. Much of this information, especially business management and food safety programming, is generated by personnel separate from the UVM Apple Program, and this project provides an interdisciplinary platform to coordinate and disseminate information from diverse authors to Vermont's apple growers.

This project is exclusively oriented toward support of Vermont apple growers, but other specialty crops, including grape, small fruit, and vegetables, may be supported through collaborative links to partnering sites and organizations. The website developed for this project supplies content generated from numerous prior SCBGP and other grant activities developed by Dr. Lorraine Berkett and other former Program leaders, including: archived topical newsletters on pest management and other production issues for apple growers; factsheets on apple production topics; archived lectures from regional experts that have presented at Vermont apple grower meetings; and summaries of research projects including apple cultivar, rootstock, pest management, and organic apple production trials. The sources of these past projects are numerous, and include EPA, USDA, VAAFM, and VTFGA funding. The website development in the present project will not generate new content, but rather develop an improved platform for dissemination of past, current, and future program material for Vermont apple and other specialty crop growers.

PROJECT APPROACH

Beginning in fall/winter 2013, UVM Apple Program staff conducted a complete redesign of the communications platform for the programming including website design and Listserv® email list development to enhance information delivery to apple growers. The new site is based on Responsive Web Design protocols to facilitate access on multiple devices, including traditional desktop and laptop computers as well as tablets and smartphones. The site also developed a new front page that facilitates user access to multiple independent content providers, such as other UVM Extension sites, VTFGA and Vermont Vegetable and Berry Grower information, UVM Grape Program information, and regional specialist sites. The core of the site contains static links to production-related topics, grouped by categories. A dynamically-updated blog platform was also developed to facilitate publication of timely material by program staff. Google analytics and UVM website traffic statistics are being used to measure and analyze site traffic.

Through discussion of the project with members of VTFGA, the use of social media to distribute production information was discarded. Given the open nature of social media applications and sensitivity around the use of crop production chemicals and the frequent, specific recommendations made to growers on their use, it was felt that those recommendations were not appropriate for a non-technical/producer audience. VTFGA maintains a presence on Facebook and through their newly redesigned (October 2014) website that provides consumer and marketing information that is not provided by UVM Apple Program.

GOALS & OUTCOMES ACHIEVED

The goals of this project included: 1) increased traffic to the program website, fruit.uvm.edu, and; 2) increased ratings by growers on site usefulness and functionality. The website and communications platform were implemented in March 2014 in order to support growers at the beginning of that growing season.

This project began October 2013, and was completed December 2014. However, since the output of the project serves as the primary communications platform for activities conducted by the UVM Apple Program, platform updates and user surveys will be on-going. Continued support for program

communications will be funded by present and future program components, including USDA Extension IPM (Integrated Pest Management) Grants and other funded projects.

Goal 1: Increase UVM Apple program website traffic

- During the benchmark period from June 2012 – May 2013, unique 3720 homepage hits were recorded on the previous Program website, orchard.uvm.edu (from internal hit count records).
- From June 2014 – May 2015, a target of 4800 homepage hits (30% increase in site traffic) was set.
- From March 2014 – March 2015, 4,565 unique sessions from 3,532 users with 13,359 page views were recorded using Google analytics. Visitors come from Vermont and the northeast region predominantly, but users from 9 countries outside of the U.S. have been recorded. During that time, 81 unique, tagged postings were made to the blog (2 Cider, 38 Grape, 38 IPM, 35 Tree Fruit, and 12 Uncategorized –many posts have multiple tags). Site traffic statistics for the previous site using internal hit count software did not provide similar functionality to the Google analytics system used with the new site, so direct comparisons are difficult to make. The previous site, in place for 21 years, continues to be linked and bookmarked by numerous sites and users, so transition to the new platform is expected to continue to increase over time to the new site. The previous site was shut down in mid-December 2014. Users attempting to access the old site will be automatically redirected to the new site.

Goal 2: Increased grower ratings of website and communications for usefulness and functionality

- Benchmark 2013: 42% of surveyed apple growers rated site as 'somewhat useful' or 'very useful' (4 or 5 on scale of 1-5) [2].
- Benchmark 2014: 55% of surveyed apple growers rate site as 'somewhat useful' or 'very useful' (30% increase).
- Performance monitoring is on-going through the annual user surveys. At grower meetings held in February of each year, comprehensive grower evaluations are conducted on website and content usability and impacts. Information from these surveys will be compared to previous surveys to track measurable outcomes. Website evaluation was surveyed under the program evaluation component of the USDA EIPM Specialty Crops grant that funds the UVM Apple Outreach Program. User reviews were collected at the February 2014 and the February 2015 Vermont Tree Fruit Growers Association Annual Meetings to assess user satisfaction with the old and new communications platforms. The February 2014 meeting of the Vermont Tree Fruit Growers Association occurred before the launch of the redesigned site. In 2014 the old site was rated as 29% moderately useful and 59% highly useful (88% moderate or better). In 2015 the old site was rated as 60% moderately useful as the top rating compared to the new site which was rated as 14% moderately useful and 86% highly useful (100% moderate or better), a 40% increase. All users indicated that they were familiar with the new site in 2015 (13% of users did not know how to rate the old website). Also in 2015, the new blog was rated as 33% moderately useful and 40% highly useful (73% moderate or better).

BENEFICIARIES

The primary beneficiaries of this project are the roughly 100 commercial apple growers in Vermont, but the overall reach of the UVM Apple Program is greater. Currently, there are 521 stakeholders (growers, state and federal agency personnel, extension personnel, and industry reps.) from Vermont, 13 other states and four countries on standard and organic apple and grape IPM email lists and databases used by the program.

Program staff also respond to homeowner inquiries about pest and horticultural issues through the UVM Master Gardener Program. In addition, the public at-large benefits from improved crop management on Vermont apple orchards through reductions in pesticide use and increased access to affordable fruit state-wide.

Apple growers indicate that information provided by the UVM Apple Program results in: improved efficacy of pest management practices (85% of respondents); a reduction in pesticide applications on their farm (77%); and cost savings to their business (54%) [2], and surveys of growers who utilize information from Network for Environmental and Weather Applications (NEWA), which is a critical component of UVM Apple Program materials, indicate an average savings of $19,500 in spray costs and reduction in crop loss of $264,000 annually [4]. Improved access to production information from the Vermont Apple IPM Program through redesign of the program's website and communications platform will increase adoption of practices that will improve efficiency of apple production systems; enhance farm profitability while reducing risks; improve pest management programs; and reduce worker, environmental, and consumer exposure to test control materials.

LESSONS LEARNED

The redesigned site and its associated components (mailing lists, blog, and social media presence) now serves as the primary means of content delivery for present and future projects of the UVM Apple Program, and serves as an important infrastructure component for growers to access production-related information that enhances farm profitability and sustainability.

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ADDITIONAL INFORMATION

UVM Apple Program Website, Blog & YouTube Channel

- http://www.uvm.edu/~fruit/
- http://blog.uvm.edu/fruit/
- https://www.youtube.com/channel/UCy7qP6IDusQS_XVcVLnf2og

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PROJECT 6: Incorporating Local Specialty Crops in Peoples' Daily Lives – Final Report (Previously Accepted)

PROJECT SUMMARY

Demand for local specialty products does not meet production potential for a wide variety of reasons. Contemporary people have grown accustom to the convenience of prepared foods and ready-made products and no longer have the knowledge and skills which made it possible for our parents and grandparents to use local specialty crops. Consumers are conditioned by subsidized industrial food prices to expect cheap food and products. However, the pendulum swing of popular culture is increasingly food centric. Nutrient values of fresh and well-preserved local food are well known and their small carbon footprint is increasingly important. All are concerned with presence of carcinogens and increase in obesity. There is a resultant renewed interest in local specialty crops and learning new and old ways to incorporate them in daily life.

PROJECT APPROACH

The Floating Bridge Food and Farms Cooperative organized fifty-five demonstrations, classes, and workshops focused on the use of local Vermont specialty crops between March 2014 and April 2015. These have engaged five hundred thirty seven people directly with at least an additional one hundred that witnessed the activities, but did not directly participate and thousands of others whose awareness was piqued through our marketing efforts. The 537 participants were not all distinct individuals as we had repeat participants through the year and people who participated in all of the activities offered at any given venue.

The demonstrations and classes were organized by nine members of the Cooperative, Ariel's Restaurant, Brookfield Bees, Field Stone Farm, Green Mountain Girls Farm, Liberty Orchard, LH Stowell & Son Christmas Tree Farm, Spruce Lane Farm, Twin Pond Medicinal Herb Farm and Pagoda Ponds.

Hands-on experiential learning is our hallmark and these learning experiences were designed to incorporate best practices for engaging people beyond the specific events they attend and into a community of practitioners who support each other and grow and perpetuate increased demand for specialty crops.

We designed the overall campaign for publicizing the learning events such that the result was more than the sum of its parts**.** We sought to have the awareness generated pique the interest of a wider public who will also purchase from Cooperative members and still others who will participate in neighboring markets.

We found that people are interested in authentic connections to the products of working lands in general, and Vermont's products have additional appeal and they are also interested in stepping beyond farm stands, into fields and farmhouse kitchens. However, busy schedules, true costs and new offers made it challenging to engage as many people as desired in the more in-depth cooking, canning and other preparation workshops. The initial general interest is there but it will take more work to translate that into committed action.

New & Lasting Materials

As we moved towards more demonstrations and less in-depth workshops, we were able to create a series of eight recipe cards, broadly defined, that give folks ideas about new and different ways to use a range of specialty crops produced in Vermont, from leafy greens to cider syrup and medicinal herbs to plants for dyes. They proved to be very popular and paired nicely with our demonstrations, samples and workshops as well as offering them at markets where the specialty crops are sold. We made them generic enough so that anyone selling that product could use them, but direct them to our Coop if folks are looking for a way to purchase the product or learn more about using them. Copies of the cards are included in the appendix.

GOALS & OUTCOMES ACHIEVED

The Coop conducted fifty-five demonstrations and classes on thirty-two different topics:

- Syrup grading and taste tests
- Making Maple Sugar Candy & Sugar on Snow
- Cooking with Herbs
- Salves & Balms made with herbs
- Pick Your Picnic - Seasonal picnic foods
- Main Course Salads from farm to kitchen and table Cooking Class
- How Christmas trees are shaped
- Honey Tasting
- Apple Science tour
- Home Orchard 101
- Apple Pie Contest
- Cider Making
- Options for Preserving the Harvest
- Know Your Farmer Know Your Pizza – how to make pizza with local veggies
- Pairing Pickles
- Festive drinks from local fruits & veggies
- Seasonal Sides Cooking Class and dinner
- Growing Winter Salad Greens
- Making Holiday wrapping with vegetable stamps
- Cold season teas made from local herbs
- New ideas for Seasonal veggie soups sampling and recipes
- Making holiday decoration with Christmas tree bows
- Mulled Cider demonstration and sampling
- Maple Sugar House Tour & Sampling
- Getting Started with Raising Bees lecture
- Pickle Sampling
- How to make Quick Pickles year-round and re-using your brine
- Incorporating Maple Syrup into your meals and cooking
- New ideas for using leafy greens
- Jacket Potatoes - recipes and tasting
- How to make sugar on snow and maple sugar candy
- How to Make Calendula oil and salve

A few of the classes and demonstrations were offered a second time due to popularity and to make them available to other people at different venues and times.

We far exceeded our goal of 20 workshops and demonstrations, and slightly exceeded our participation goals. That was possible as we ended up doing far more free or low-cost hands on demonstrations and fewer longer, in-depth workshops. We found it difficult to both schedule the longer workshops with instructors and find an adequate audience at the price required to cover expenses, even with the grant support. One of the offerings included a corporate sponsorship by King Arthur Flour.

Observations during the events and subsequent feedback confirm that participants had a high degree of engagement. The following vignettes capture the essence, significance and range of experiences to date.

Free demonstrations piggy-backing on our existing markets and other events have resulted in huddles of 20 to 40 people of all ages engaged, asking questions and enjoying not only the learning but also the shared experience with other attendees with members sharing their own knowledge, experience and stories. For example, participants circled around and helping to press cider on the green outside Brookfield's Old Town Hall stayed 30 minutes past the 30 minute demo. Meanwhile the press was there roadside all day and many passers-by rolled down windows to ask for information about the event. The demonstrations also managed to engage folks in a specialty crop learning experience even if they didn't seek it out, whereas the workshops and classes reached people who had already decided to expand their knowledge.

Standing on the shoulders of years of collaboration, the Cooperative's Marketing committee designed and executed a marketing campaign with excellent consistency, containing all the offers under the tagline *"Slice of Life,"* capturing and nurturing interests in not only specialty crops but the ways of life which incorporate specialty crops into daily meals, practices, celebrations and life. In addition to fresh look and content, we have created easy to reuse templates for posters, e-blasts, print and radio ads and post card handouts. Additionally the overall campaign added focus to ongoing social media and

associated website based event materials, compounding the value of time spent populated free calendar listings in a wide range of outlets by ensuring that folks have easy access to information. Earned media reinforced this rigorous social and traditional media outreach and a modest and stealth advertisement campaign. The ad campaign sought to use the broad base of visibility of summer outreach and focus interest in our Christmas tree cutting and Holiday Market, where we focus our largest annual audience and sales.

An example of the advertising is below, and in the appendix we have included copies of additional marketing materials.

Notes from some participants do confirm our success in our effort to "engage people … into a community of practitioners who support each other and grow and perpetuate increased demand for specialty crops" and hallmark authentic "hands-on" farm experiences.

BENEFICIARIES

There were at least four types of beneficiaries.

Participants - The 537 most direct beneficiaries. A group of people who are now more engaged and more committed to Vermont specialty crops more ideas on how to use them. One of the best, unexpected examples was two teenage brothers that attended an event and sampled Chard Gratin as part of a meal featuring new ways to use leafy greens. They missed the presentation, but did enjoy the meal which featured the items. After the meal, they approached one of the organizers and asked how it was mad and what was in it as they loved it. They were surprised it was chard, but then hearing the simple directions said, "Even we can do that!" and eagerly took the recipe card home. Their mother reported when shopping for chard from one of the coop members that the boys came home raving about the chard gratin, so they were going to attempt to make a batch together. Inspiration for using an easy to access but often overlooked specialty crop had been achieved not even through the official demonstration, but the meal afterwards that featured the dish.

Friends, neighbors, colleagues of participants as they spread what they learned. This is the hardest to quantify, but where the biggest potential lies in an effort like this. We can only reach so many people with a series of workshops and demonstrations in Central Vermont. But when those five hundred people engage their friends, family and colleagues with the new enthusiasm for a particular specialty crop, or means of using it or source of it, that can have a major ripple effect. This impact is demonstrated by a story related to us by a participant in the first Seasonal Sides Cooking Class held in December 2014.

Example: *Ruth, a retiree from Rutland participated in the class at the invitation from a family member in Northfield. One of the dishes was spicing up a simple green salad with a quick pickled fennel. She loved the dish and had often wondered what to do with fennel. She figured she could get some fennel at the Rutland Farmers Market so she made the salad for a potluck dinner event in the following weeks. Several folks asked her for the recipe which she shared and then within the month she was at another event where someone she introduced to the recipe brought the salad with the quick pickled fennel. She was surprised to see it catching on so quickly, but shared the story as she thought the class instructor would love to know. And truly it demonstrates the potential of networks.*

Nine Coop members had a chance to test out different kinds of offers, develop curriculum and materials and engage some new customers. Members discovered some ways of engaging folks that they plan to continue and ideas that do not work for them and their market. All continue to benefit from an expanded customer base for the seasonal markets and having long-lasting materials such as the recipe and information cards and an improved website.

Specialty crop producers in region - Participants may have been introduced to some particular producers with the various demonstrations, but overall some will now choose the most convenient producer when they are looking for particular specialty crops. Like the example above, a vendor at the Rutland Farmers Market benefited when a Rutland participant then sought to purchase products for a recipe.

LESSONS LEARNED

We did an initial test during the 2014 sugaring season with an on-farm sugaring season brunch, a demonstration of the new maple syrup grading system and a workshop on making maple syrup candy and sugar on snow. With 80 people attending and several of our member farms involved, it was a success, but also clarified for us some of the systems and set up we needed to make it all work.

We discovered in the early stages of implementing this project that to be able to connect effectively with area residents and visitors, we needed some critical upgrades in our marketing tools.

Our website has been transitioned to a more user friendly system with better ability to share information about workshops and classes, and we have a new email alert system and event registration so to ensure smooth communication for people. This work created a new platform from which to effectively offer workshops, demonstrations and connect with interested customers, but took notable time from members of the Coop.

Amidst the project we were optimistic for its success. Yet, while we perceive a significant desire for specialty products we know the trend is still increasing toward people choosing convenient, cheap, prepared foods. The very essence of our need for getting the grant remained our biggest hurdle - reaching and connecting with people in their busy lives enough to get them over the hump to allow them to take time and energy to learn about using raw ingredients/whole foods, create new shopping, cooking and eating habits.

One of our major delays was not anticipating the volume of support members might need to bring workshop ideas to fruition in a timely manner. While we had budgeted time to help with that, we did not realize that we needed to have our coordinator directed to essentially take the lead on organizing the workshops as opposed to being available to members to support them. The challenges for small business owners and farmers of addressing the important (organizing workshops) in the face of the urgent day to day work was more significant than anticipated. This resulted in us doing more free demonstrations attached to markets and other events and fewer classes and longer workshops. This then relied on some additional in-kind match of materials, space and time from Coop members as our class fee income was smaller.

We also found the recipe cards very valuable and are considering expanding the series to include some additional cards focused on pickles, storage veggies, apples, honey, and herbs.

Overall, classes and workshops were also more challenging from both the Cooperative members having the confidence to make offers for more substantially priced offers and for participants to invest – time and money to attend.

We found the casual offers, demonstrations and mini-classes that folks did not have to register for, allowed us to engage far more people. What is uncertain is did we engage them deeply enough to shift behavior. One idea that came out of conversations with participants is a hybrid. Instead of cooking classes, perhaps collaborative cooking dinners where it was a bit about learning but also about sharing a meal with interesting folks -- something you need to do anyway so it is easier to fit into your schedule. We found in the cooking classes liked what they learned from each other in addition to what was learned from the instructor. This type of community cooked meal could be a way to still introduce new ways to use seasonal, local specialty crops but in a less formal atmosphere. And perhaps could be a community building effort around local food.

Funds Expended

Total expenditures for the project were $ 17,771.07 on the project, our budget anticipated $17,519. This includes USDA Specialty Crop Block Grant funds and cash and in–kind matches from Hunger Mountain Cooperative, Class fees, FBFFC Coop savings, and FBFFC member in-kind contributions of food, supplies and product discounts, space rental and cleaning fees, instructor fees for duplicate demonstrations, printing and organizing and marketing time.

Income and match funds totaled $8,047, our original budget aimed for a $7,664 match. Match funds included:

- Hunger Mountain Coop Community Grant: $1,750 (cash) Class Fees: $1,909 (cash)
- FBFFC Savings contributions: $350 (cash) In-kind contributions: $4,038 (in-kind)

Grant funds via the Specialty Crop Block Grant include $7,884 received in first two invoices and an additional final payment to come of $1,971 for a total of $9,885.

CONTACT PERSON

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ADDITIONAL INFORMATION

- Web links: http://www.floatingbridgefoodandfarms.com/learning-events
- View the Appendix at http://bit.ly/1mgTepj
    - Eight Recipe & Information Cards
    - Marketing Samples (ads, press releases, postcards, posters, etc.)

Project 7: Feeding the Valley: Workplace Markets – Final Report

PROJECT SUMMARY

The purpose of this two-year project was to double or, ideally, triple the number of worksites in the Upper Valley of the Connecticut River partnering with farms to offer specialty crop delivery to their employees on-site. Through facilitating worksite delivery, Vital Communities planned to overcome the barrier of inconvenience to local food purchasing and increase the consumer base for local direct-to-consumer sales.

Over the two-year project period, we doubled the number of worksites engaged in on-site CSA delivery with New Hampshire and Vermont specialty crop farms. Eleven farms sold products to 19 workplaces, over 50% of new customers bought more local specialty crops due to the project, and farms grossed $135,016 over two years.

At the time of the proposal (Spring 2013) we were hearing anecdotal reports from Upper Valley farmers that market capacity for existing direct market outlets, such as CSA shares and farmers' markets, was nearing saturation. Citing a lack of marketing skills and resources, time, and/or personal contacts, Upper Valley farmers asked Vital Communities' Valley Food & Farm program to facilitate connections with workplaces that could incorporate specialty crop sales into their wellness benefit programs for employees. The project approach was later confirmed by our 2014 Upper Valley Local Food Market Assessment[5], which examined growth areas in the local food system and found that farms and consumers desire more direct market connections. Fifty-six percent of the region's farmers want to increase their direct-to-consumer sales, and 75% of consumers said they wanted to eat more local fruits and vegetables. Twenty two percent of consumers indicated they would buy more local food if it were delivered to their home, school, or workplace. Eighteen percent of farmers said marketing was a barrier to growth.

Vital Communities' approach was to leverage our role as a regional sustainability convener to help worksites consider and implement a local food wellness benefit. Vital Communities *engages citizens, communities, and organizations in creating solutions to our region's challenges*, working closely with area employers through our Corporate Council, Local First Alliance, and Transportation Management Association. Our Valley Food & Farm Program fosters the relationships that keep agriculture part of daily community life. Workplace Markets leveraged Vital Communities' non-farm business relationships on behalf of local farm businesses, relying on employers' commitment to local economy and/or sustainability as an incentive to consider on-site farm delivery.

PROJECT APPROACH

In fall 2013 we began worksite outreach planning, including seeking input on project design from three worksites who supported the proposal, and from four CSA farmers.

Our priorities for the matching process were: 1) Vital Communities would play a neutral role, neither recommending nor excluding interested farms; 2) We would help establish the farm-workplace relationship;

[5] http://vitalcommunities.org/valleyfoodfarm/farmer-resources-support

3) Vital Communities' ongoing support would not be necessary after the formal conclusion of the project, i.e., the relationships would become self-sustaining.

We also confirmed baseline numbers of current farm-to-workplace programs in the Upper Valley, concluding that 13 was the correct number of existing CSA drop sites at workplaces.

In January 2014 we created a suite of outreach tools for employers and farmers. Two simple, double-sided pieces, available in print and pdf format, promoted the farm-fresh delivery concept to worksites (attached to this report). Farmer outreach consisted of a simple Word document describing the project and their potential involvement.

In January 2014, we held a first best practices meeting with our organizational partners: The Intervale Center, Rutland Area Farm and Food Link, and Local Foods Plymouth. The Vermont Agency of Agriculture was also represented (details under Partners section).

The most time-consuming component of the project was recruitment of worksites, which took place through phone conversations, emails, and meetings. Our first 2014 worksite candidate committed in December-January and the last in April. All contacted worksites participated in the project except those who felt they could not meet the deadlines. No worksite expressed interest in a multi-farm online ordering platform and only two farms did so.

Two email announcements to all famers with CSA listings in our Valley Food & Farm Online Guide (522 total recipients) described the program and requested their level of interest. After gathering uniform information about the CSAs or delivery offerings as well as types of farm products, day/time limitations, and special delivery situations from each of the 21 farms that responded, we sent them a list of interested workplaces. Farmers selected their preferred prospects, from which we compiled a spreadsheet of farms for each worksite's consideration. As a result, seven businesses engaged with seven specialty crop farms at eleven locations for the 2014 season (three of the farms met the USDA definition of Beginning Farmers).

In fall-winter 2014-15 we evaluated the year through electronic surveys to farmers and consumers and conversations with farmers and worksite champions. Although farms were largely positive about the project they did wish for more customers at each site, which we hoped we could support via new marketing materials under development in spring 2015. The materials were not ready before CSA deadlines.

We held our second partners meeting via phone in winter 2015 (see partners section).

In December 2014 we began our second season of workplace outreach for CSA partnerships. We did a general promotion of worksite markets via the Vital Communities e-newsletters, which most of our worksite partners receive (6,000 readers). We personally contacted 20 worksites via email, phone, and intermediary contacts such as wellness staff at partner organizations who might know the wellness staff at a potential site. (Total worksites personally contacted during the project is estimated at 36.) Out of 20 worksites, we were able to take five through the process of creating successful farm partnerships in 2015. Out of the remainder: five did not return repeated inquiries but we later learned one of these was already working with a farm; at least four indicated they were interested in the future but not in 2015; and the rest began the process but then fell out of communication.

An addition to the project this year was ongoing communication with worksites to offer printed material supporting local specialty crop consumption and experimental on-site education at one worksite. We reported on this intention in our 2014 Annual Report. Funding from the USDA Farmers' Market Promotion Program supported a redesign of the Valley Food & Farm local food promotion materials, including posters and rack cards encouraging local farm purchases, adding a database of recipes to the Valley Food & Farm website, and general marketing activities. We used these materials in communication with worksite contacts. We also experimented with cooking education at one worksite, doing a grilling demonstration in September and attending the employee health fair in November with a winter vegetable soup. (Costs were only applied to this funding for appropriate specialty crop promotion; materials and time that also promoted non-specialty crops were applied to FMPP or match.)

In fall-winter 2015 we did our final project evaluation, again through electronic surveys to farmers and customers, conversations with farmers and worksite contacts, and discussion with the Valley Food & Farm advisory group (our advisory group includes farmers, farm-related businesspeople, and farm to school educators).

Our original proposal included potential development of a multi-farm online ordering system. Two growers expressed interest, but no worksite has done so. Without concrete demand from a location with a significant customer base, we could not justify project dollars on market development for this concept. It might be a successful enterprise in the Upper Valley region, but would need a feasibility study.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project **staff ensured that funds were used to solely enhance the competitiveness of specialty crops.**
Eleven specialty crop farms were able to participate in the project over two years. Participating farms are all diversified vegetable farms, some of whom also offer non-specialty crops for sale (mostly pastured meats). Our staff time promoted the specialty crop CSA component of those businesses, and we were not called upon to directly advise on non-specialty crop sales, storage, or use for those worksites. Two pastured meat farms expressed interest in worksite delivery; we added them to the worksite offerings (using matching funds) but neither were chosen for a worksite partnership.

Specialty Crop Block Grant Program funding supported two formal best practices conversations among workplace markets support organizations during the grant period. The Intervale Center, Rutland Area Farm and Food Link, and the Vermont Agency of Agriculture were all able to participate in both formal conversations, Local Foods Plymouth attended one. The discussions covered our activities, successes, challenges, and lessons learned. We also shared our outreach materials and benefitted from the Intervale Center's research on workplace-based sales. All our work in this part of the value chain is formative and these conversations are extremely valuable, so much so that we spontaneously organized a third meeting among the Vermont non-profits over lunch at the Vermont Farm to Plate Annual Gathering in October 2015.

GOALS AND OUTCOMES ACHIEVED

During the granting period, our goal was to *open and expand farm-to-workplace markets for specialty crop producers.* All the activities described in the Project Approach section served this goal.

Eleven specialty crop CSA farmers report nineteen new or expanded sites tried worksite delivery over the project period. Currently we expect 14 sites to continue in 2016, slightly more than double the pre-project

baseline of 13 sites. Farmers estimate a cumulative gross income of $135,016 over two years, $58,382 in 2014 and $76,634 in 2015.

Our original and adjusted outcomes for the grant period were as follows:

1. *Double the baseline of (13) direct specialty crop farm sale sites to 25 in our region, with a stretch cumulative goal of 30 sites [adding 12 to 17 new sites]. Adjusted goal 2014: Add 20 sites during the project.*

   Participating farms report that over two years 19 new or expanded direct specialty crop farm sales sites were created through the project. Out of the 2014 sites, three stopped delivery in 2015, due to farm business changes (2) or lack of customers (1). Out of the 2015 sites we expect at least two will not continue, due to farm business change (1) and insufficient customers (1). At this writing we anticipate 14 worksite relationships will continue in 2016, hence we met our original stretch goal of sites added during the project.

   In our 2014 Annual Report we took a new stretch goal of adding 20 new sites over the span of the project. Although we nearly reached this with short and long term sites, we do not count the one-year sites as 'added.' Additionally, two of our 19 sites are 'expanded' (i.e. one added a pop-up farm stand, and one existed but was boosted by promotion of new and old sites at the college where it is hosted). That said, we anticipate new sites will continue to add farm delivery in 2016.

   This outcome measure did not address whether new sites continued to partner with a farm past the life of the project, or past the first year. The details of the business partnership can be lost in a purely quantitative analysis. Of the three sites that dropped in 2015, one was dropped by a downsizing farm and picked up by another farm that year; one was dropped by a farm reducing the CSA component of the business; one had too few participants (eight in 2014, fewer forecast in 2015).

2. *Due to worksite delivery, 30% of new customers will report "buying more NH- and VT-grown fruits and vegetables." Customer surveys will also measure whether workplace-based markets decreased participants' VT/NH specialty crop purchases at other venues or increased overall NH/VT specialty crop purchases. We will ask customers to estimate change in total dollars spent on specialty crop purchases during the project.*

   We are very pleased with the data on this outcome, as the project was designed to overcome the barrier of 'inconvenience' to purchasing local food directly from farmers and did so. We gathered data via electronic surveys sent to worksite contacts and farmers, with a request that it be passed on to the customers. In 2015, we offered an incentive to survey respondents.

   We gave a multiple choice question: 'How did the worksite CSA change the amount of "locally grown" fruits and vegetables you bought this year? (please consider "locally grown as grown in New Hampshire and/or Vermont).' Respondents could indicate whether they bought more, were a CSA member the prior year so no change, bought same amount but from a new location, or bought fewer.

   2014: Based on farms' reporting, we now estimate *134* CSA participants subscribed to Workplace Markets at the 2014 locations. Of the 25 subscribers who answered our electronic survey, 84% were new to CSA, and, of these, 85.7% reported that the CSA accounted for increasing their overall consumption of locally grown fruits and vegetables. From this initial data, we can extrapolate with 95% confidence that,

due to this program, between 72% and 99% of participants new to CSA in 2014 increased consumption of locally grown [NH & VT grown] fruits and vegetables.

In 2014, zero survey respondents chose 'I bought the same amount, just from a new location."

In 2015 farmers report 197 customers for Workplace Markets. We surveyed customers in December and January, this time offering an incentive for participating, and received 43 responses. Of these, 33 (77%) were new to CSA, and 16 of these (48.5%) bought more locally grown fruits and vegetables due to the CSA. We can extrapolate that between 60%-90% of total customers were new to CSA and approximately half of these bought more locally grown fruits and vegetables.

In 2015, out of the 43 respondents, 6 (16%) indicated that they "bought the same amount, just from a new location."

We also asked about increase in spending, and can say with 95% confidence that that due to the project 66%-100% of 2014 participants increased their spending on local fruits and vegetables by over $100, and 50%-82% of 2015 participants increased their spending on local fruits and vegetables by over $100.

3. *Participating specialty crop farms will set and meet sales goals over their term of participation. Using financial reporting from specialty crop producers and results of customer surveys we will be able to assess the increase in specialty crop sales as a result of Workplace Markets and our progress toward our stretch goal of $165,000 aggregate gross income.*

   Farms did have sales goals for each site, in shares rather than dollars, and in many cases did not meet them. We are disappointed to not meet this outcome. Whether or not farms met the goal, however, does not always predict whether they plan to continue working with the site. In one example, a farm wants 20 members but reports just 16 for two years in a row with the comment "love this drop" (no further detail provided). One farm almost doubled their sales goal at a site but will not continue due to closing their farm business for unrelated reasons (we are helping the site find a new farm partner). A farm might see future growth at a low-subscriber site, or find ancillary benefits in the sales outlet.

   Out of 19 sites over the two years, four sites met farm sales goals. Fourteen did not, and two farms did not report goals. Out of the fourteen sites, however, only four have confirmed the end of the relationship. We believe the remaining ten will continue in 2016. Farms want a number of shareholders ranging from 5 to 50 across the sites, and received shareholder numbers ranging from 1 to 31.

   The aggregate gross income to farms over two years was $135,016 (more detail in Beneficiaries section).

4. *Vital Communities' involvement will effectively address the common issue of customer retention. For each worksite involved over multiple years, employee participation will hold steady or increase during the second year. Data will be gathered through communication with the worksite and customer surveys, above; and will include quantitative data such as total numbers of participants, repeat participants, and qualitative data about reasons for participation/non-participation.*

   Sites continuing for both years kept relatively steady shareholder numbers. Nine sites participated in both years, one lost 9% of shareholders from 2014 to 2015 and one almost tripled shareholders in that

time, the rest ranged around a 10% gain in shareholders. As mentioned above, total shareholders at participating sites was 134 in 2014 and 197 in 2015.

Shareholders gave excellent feedback on reasons for continuing or ceasing their CSA involvement. Shareholders planning to stop CSA stated familiar barriers such as, "We struggled to eat everything in a week, and the amount of veggies that we eat on a normal basis was low," "I don't like strawberry and kale," "I only joined this year as we moved and were not able to have our own garden. Next year I plan on growing my own." Shareholders continuing stated reasons such as, "Convenience, expands the healthy options on my table, and the sense of fun it offers my colleagues," "I love the fresh veggies straight from a local source and the convenience. For many years, I participated in a CSA where I live. When I returned to work full time several years ago, it was very difficult to get to my old CSA before they closed on pick up days. Having the CSA come to work is genius!"

Asking 11 farms and 19 worksites to track individual repeat customers proved too onerous. We do not have enough data to make causal relationship between Vital Communities' role as the market facilitator and a retention rate. Customers surveyed did not make a connection between Vital Communities and their intention to continue or discontinue their CSA shares. We do know that farmers were largely satisfied by our work (see below), and see our impact via qualitative comments such as, "We wouldn't have had any worksite relationships without Vital Communities. They introduced us to the worksites and did an amazing job of presenting what we offered."

5. Specialty crop farmers will express 100% satisfaction with Vital Communities' work in surveys and conversation. This will include satisfaction with an equitable process for matching interested farms with workplace market opportunities.

   We did not meet this ambitious goal but are pleased with how close we came. Out of 14 farms responding to this question over two survey years, eight farms reported 100% satisfaction, three reported 75% satisfaction, and one reported 0% satisfaction.

   In the case of the 0% satisfied farm, no participating worksites were near enough to their service area for them to engage in the project, and we presume this caused dissatisfaction. As far as the 75% satisfied farms we believe the low number of shareholders at a site was dissatisfying for two. In the third case, the farm did not wish for the worksite to expand to add more farms, whereas the worksite did wish to extend the business offer, and Vital Communities made the choice to work with the worksite to expand.

   We asked farms whether they thought the process for matching farms to workplace market opportunities was equitable. Six farms indicated the process for matching farms to worksites was equitable, one said it was somewhat equitable, one said not equitable, and four indicated they did not have enough information to answer the question.

BENEFICIARIES

Specialty Crop Farmers: Eleven participating farmers earned an estimated $135,016 combined gross income over the two project years, selling a peak of 197 CSA shares in 2015. 2014 estimated combined gross income to farms is $58,382, 2015 estimated combined gross income to farms is $76,634. Two sites will not continue in 2016 to our knowledge; if these are removed and other shares and prices remain the same for 2016, farms will gross $74,019 this year.

Farmers may drop a few more worksites over the next two years unless share numbers increase, at the same time, new sites are interesting in expanding their offerings. We hope the approximately $70,000 yearly gross will be the norm or low end for these farm-workplace sales outlets in years to come.

Five participating farms are in New Hampshire and six are in Vermont.

Beginning farmers: Four farm beneficiaries met the USDA definition of beginning farmers. One of these closed their farm in winter 2015 after a re-evaluation of family goals. The farmer wrote us: "We want to thank you again for all of the work you and Vital Communities did to make this possible. This was our first truly profitable year and the customers that you helped us find made it possible."

Worksites: 19 worksites engaged with new or expanded local food access for a high of 197 shareholders (we did not ask farms to track individual shareholders and hence do not know total number of individual shareholders engaged over the two years). Nine worksite locations were in Vermont, nine in New Hampshire, and one business had drops in both states (we have been counting this as one expanded site).

Customers: If we conservatively assume that the 197 shares sold in 2015 went to a 2-person household, 394 individuals received CSA shares. In 2015, 50%-82% of shareholders increased their spending on local specialty crops, which we consider a benefit.

Ancillary beneficiaries: Worksites who have not yet partnered with a farm, and non-shareholder employees at participating sites have increased exposure to local foods. We have not quantified this exposure but know from conversation that it is occurring and we hope local food as a wellness benefit is becoming the norm at sites.

LESSONS LEARNED

The project confirmed our expectation that workplaces were not a fully tapped market for CSA delivery in the Upper Valley. The extent of growth in the workplace-based market remains to be seen over the next few years as sites either continue to expand and solidify farmer relationship. We will continue to match farms with sites and help new sites begin a program, as requested. We continue to provide our workplace contacts with local food marketing materials.

Our question about the feasibility of a multi-farm business model was inspired by nearby examples that our project partners have developed. We have not found enough demand from either a workplace or farms to further delve into a workplace-based business in the Upper Valley. Additionally, farms did not report delivery infrastructure as a barrier to growth in our Market Assessment. The Intervale Center developed their Food Hub with a focus on workplace delivery after a feasibility study in the relatively densely populated Chittenden County (VT) area; Rutland Area Farm and Food Link (VT) has developed Farm Fresh Connect, an online ordering platform developed to build business opportunities for beginning farmers. If a similar program is to develop in the Upper Valley, workplaces might not be the target sales location.

A strength of the project design is that Vital Communities does not need to play an ongoing role once the farm-workplace relationship is established. We did not have worksites or farms make any formal commitment to the program, to ongoing communication with our Valley Food & Farm program, or even to evaluation, because we intended to be a light and soon unnecessary presence. In future we would consider one or more of these commitment methods, in order to better measure impact, as well as use our marketing

resources to support increased use of local foods both among CSA shareholders and other staff. This was an oversight we regret and will work to remedy.

CONTACT PERSON

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ADDITIONAL INFORMATION

We are submitting the following files:

Printed materials: (these are dated 2015 and very similar to the 2014 version save for the dates) A poster for worksites to use promoting the benefit, an overview of the program, a Q&A sheet for sites; a Q&A sheet for farmers, and a PowerPoint presentation given in Lebanon, NH to a gathering of New Hampshire Businesses for Social Responsibility.

Fresh Local Food Delivered at Work

Are you interested in joining a "Workplace CSA?"

- Enjoy the convenience of food delivery right at work
- Know your own Upper Valley farmer and support our local farm economy
- Eat local, healthy, seasonal foods fresh-picked that very morning
- Try new foods and recipes
- Affordably priced, usually at a discount from similar produce on a store shelf

How Does it Work?

With "Community Supported Agriculture (CSA)" customers pay a lump sum to a farm in March/ April and then a weekly mixed box of vegetables is delivered right at work during the growing season. There may also be fruit, eggs, flowers, breads, meats and more as options with certain farms. Farms will include recipes, and you may be able to visit the farm for special events or to pick your own herbs, fruit, and flowers.

Prices will depend on the CSA farm your worksite chooses, and you may be able to choose between two box sizes- small and large. The lump sum in the spring averages out to cost you approximately $20-$35 per week (final costs will depend on the specific farm), but the value of the produce is usually higher- farmers are providing a discount!

"It was exciting to open the box each week and see what was inside! I found myself eating healthier and trying new recipes due to my participation in the CSA; a sentiment shared by my colleagues as well."

Kathy Lowell, Dartmouth Printing Company

Workplace CSA ~ Q & A

Valley Food & Farm will help you design a workplace delivery program for your employees.

Let Valley Food & Farm know you are interested in a 2015 workplace CSA by mid-February. We have a very short questionnaire for you to fill out, so that we may share your information with farms. If you are not ready to commit by mid-February, it is possible to consider a fall CSA or simply plan to begin in the fall of 2016.

VF&F staff will share your information with interested farms. By March 1, VF&F will let you know which farms are interested in delivering to your worksite. You will need to choose from the interested farms as quickly as possible. Most CSA farms will have a March deadline for new customers. VF&F is happy to help you with this process.

What does a CSA cost?

The cost of a CSA subscription varies depending on the duration of the subscription season (it could range from 10-15 weeks in spring, summer, and/or fall), the size & contents of the box, and the farm's business model. You will receive price & logistics details from farms interested in delivering to your business, but a general range might be $250-600 for the season, breaking down to $20-35 per week.

What will our workplace need to provide?

- Ensure that management and facilities staff have approved the proposed program
- Establish a local food champion at the worksite. This person will be the contact person for the farmer, answer employee questions, and help with leftover boxes
- Establish procedures for unclaimed boxes, with your facilities staff as well as the farm
- Commit to promoting this benefit to your colleagues

Is there a minimum number of employees for participation in worksite CSA delivery?

We will ask you to estimate participation numbers as best you can before mid-February. After choosing a farm, you will discuss minimum enrollment with your farm partners. Most farms ask for a 10-person minimum. If your workplace is too small, perhaps there is a neighboring business also interested in participating in a local foods wellness program.

Is there a cost to our business to participate?

The staff who join a CSA will pay for their own share of vegetables. You may opt to subsidize this wellness benefit for your staff, which will increase participation. Workplaces have chosen many options to assist employees in accessing the benefits of local foods. Upper Valley examples include: payroll deduction, which assists by distributing costs through the year; subsidy by lottery for staff in certain pay grades; lump contribution toward the costs for all staff.

Valley Food & Farm is funded by the USDA Specialty Crop program to assist Upper Valley worksites and vegetable farmers grow this fresh food opportunity, so there is no cost for our assistance during 2015.

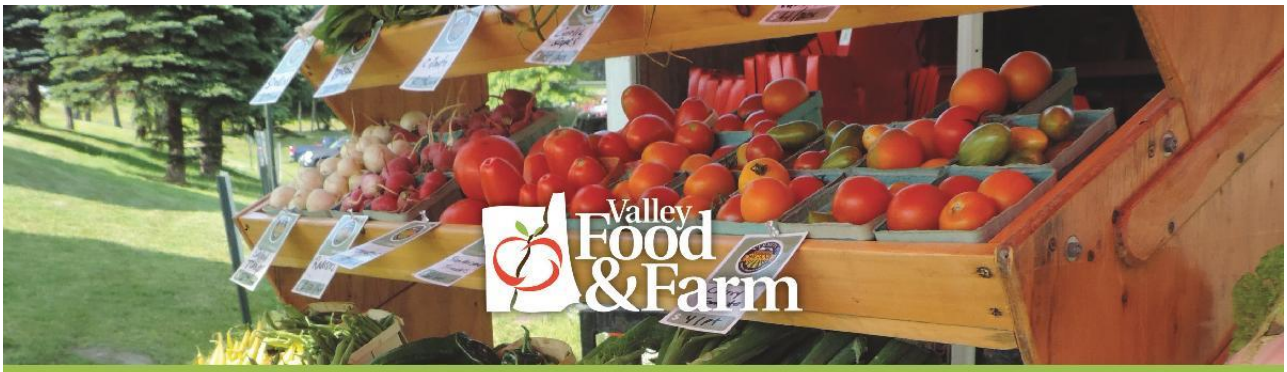
What kind of agreement do we need to make with our farmer?

Your workplace representative and the farmer should meet in person to establish good communication and a mutual understanding of the proposed system. At the meeting, discuss the expectations for each party. Concerns to discuss include:

- Will your workplace host the farmer at a staff meeting, or provide a 'meet the farmer' opportunity, to promote participation? What other promotion opportunities will there be?
- When will the signup deadline be? Are employees communicating directly with the farmer or is the workplace playing an intermediary role?
- Farming is affected by weather and other uncontrollable events. Make sure to discuss expectations and agreements regarding crop failure, and how to communicate the risk inherent in farming to the participating staff.
- Are there specific times and days of the week in which deliveries can be made?
- If your workplace will be providing financial incentives to staff participation, discuss them with the farmer, as it may affect the signup and payment process
- Are there other farm experiences that employees can take advantage of at the farm, such as Pick Your Own, on-farm potlucks, tours, Valley Quest experiences? How will your employees learn of these opportunities?

Valley Food & Farm can support local food culture at the workplace and home with our enewsletter filled with recipe suggestions, local farm news, and Harvest of the Month materials. Workplaces might use this in different ways: for example by making a subscription available to your staff or by using selected components in internal wellness bulletins. We will work with you to maximize the opportunities fresh food access can give for boosting employee wellness and our local economy.

Contact: Becka Warren, Valley Food & Farm Manager, Vital Communities
becka@vitalcommunities.org • 802.291.9100 Ext. 112 • www.vitalcommunities.org



Workplace CSA for Upper Valley Farmers

Valley Food & Farm is facilitating workplace CSA delivery again in 2015

We want to match your farm with worksites for CSA delivery! We are in the middle of a two-year project to ensure that all our regions' workplaces have considered offering local vegetable delivery to employees. In 2014 we facilitated 12 new and/or expanded sales sites for seven farms. In 2015 we will try to add 15 more sales sites. Please let us know right away if you are interested in participating this year.

Which farms can participate?

This project is funded by the USDA Specialty Crop Block Grant program, so our emphasis is on vegetable and fruit producers in the Vital Communties service area (as well as greenhouse and floral, should any producers be interested). Last year we did have some meat, dairy, and bread businesses interested in delivering, and we are able to provide their information to worksites.

How does the process of finding a delivery site work?

Let us know of your interest in participating as soon as possible. We are reaching out to worksites and will have a list of interested sites by mid-February. We will then ask farms to let us know which participating worksites interest them. If you are interested in a site(s), you will fill out a questionnaire about your CSA. We will then share information from all the interested farms with the sites. The worksite chooses the farm. We will let you know their decision as close to the beginning of March as possible.

If your farm wants support with current sites but does not want to add new sites

We will be in touch with materials that might encourage enrollment before your deadlines, ideas for recruiting more members, etc. In 2015 we will be developing a new buy-local campaign which will include materials you can adopt for your own marketing, so look for those in the spring!

Is there a cost to our farm to participate?

No. Valley Food & Farm is funded by the USDA Specialty Crop program to assist Upper Valley worksites and vegetable farmers grow this fresh food opportunity, so there is no cost for our assistance during 2014 & 2015.

What happens if we are chosen by a worksite?

You and the workplace representative should meet in person to establish good communication and a mutual understanding of the proposed system. At the meeting, discuss the expectations for each party. Concerns to discuss include:

- Will the workplace host you at a staff meeting, or provide a 'meet the farmer' opportunity, to promote participation? What other promotion opportunities will there be?
- When will the signup deadline be? Are employees communicating directly with you or is the workplace playing an intermediary role? Who is the primary contact once deliveries begin?
- The workplace may not be familiar with the seasonal nature of local foods or the risk of crop failure due to weather. Make sure to discuss expectations and agreements regarding crop failure, and how to communicate the risk inherent in farming to the participating staff.
- Are there specific times and days of the week in which deliveries can be made?
- Find out if the workplace will be providing financial incentives to staff participation, as it may affect the signup and payment process
- Are there other farm experiences that employees can take advantage of at your farm, such as Pick Your Own, on-farm potlucks, tours, Valley Quest experiences? How will the employees learn of these opportunities?

Contact: Becka Warren, Valley Food & Farm Manager, Vital Communities
becka@vitalcommunities.org • 802.291.9100 Ext. 112 • www.vitalcommunities.org

PowerPoint presentation given in Lebanon, NH to a gathering of New Hampshire Businesses for Social Responsibility.


EXIT

Businesses offering CSA/Farm Stands

- 41 Centerra
- David's House
- Creare
- River Valley Club
- Adimab
- Mascoma Savings Bank- 3 locations
- Hypertherm
- Hardware Store at Centerra
- CCBA
- Lebanon school district offices
- VA Hospital
- Dartmouth Hitchcock Hospital, 2 locations
- Cold Regions Research Laboratory
- King Arthur Flour
- Resource Systems Group
- Kendal at Hanover
- Dartmouth College-5 locations
- Mt Ascutney Hospital
- Dartmouth Printing Company
- Alice Peck Day Hospital
- Colby-Sawyer College


NO PARKING


Fresh Veggie
Fridays at DHMC
live well
First Day of Summer


Fresh Veggie
Fridays at DHMC

Project 8: Beyond Localvores: Creating and Sharing Marketing Solutions to Increase Local Food Consumption in Vermont – Phase 2 – Final Report (Previously Accepted)

PROJECT SUMMARY

The purpose of this project was to enhance the marketing efforts of specialty crop producers who sell products through direct-to-consumer channels, such as food hubs and related business models, by developing and implementing educational and marketing strategies that help current and potential customers understand the benefits of buying and eating locally grown specialty crops. Working closely with Marketing Partners, in 2014, we developed a booklet for Best Practices to Enhance Workplace Culture geared toward specialty crop producers and their advocates; developed an Intervale Food Hub Strategic Marketing Plan; and developed a Creative Platform and a Planning Brief for a new website for the Intervale Food Hub. Our work built on a marketing study completed in association with Skillet Design and Marketing and funded through the Specialty Crop Block Grant Program in 2013. Principal beneficiaries were the 30 specialty crop producers who sell products through the Intervale Food Hub, an online market for local food, as we grow the enterprise from $400,000 in sales in 2011 to $705,000 in 2017.

PROJECT APPROACH

Deliverable	Responsible Party	Timeline
Development of booklet for Best Practices to Enhance Workplace Culture geared toward specialty crop producers and their advocates: • Utilizing creative from the 2013 Booklet "Lessons Learned in Exploring Food Consumption in Vermont", we completed a creative marketing brief outlining key message points, target market and general creative direction. • Completed content for booklet and layout design. • Printed and disseminated booklet to 100 groups/farm businesses. • Though we have yet to widely share results, we will share them with other specialty crop producers and others implementing workplace delivery programs nationwide through our website and informally. A copy of the document is attached.	IC staff	January – April 2014
Development of the Intervale Food Hub Marketing Strategy: • Building on data collected during Phase 1, we completed a competitive review and outline new opportunities for marketing.	IC staff and Marketing Partners	January – April 2014

• We then developed a comprehensive strategic marketing plan for the Intervale Food Hub, which is attached.		
Creative Development for Intervale Food Hub Marketing Strategy: • We developed a creative platform for Intervale Food Hub, which will be shared with other Vermont food hubs through meetings coordinated by Vital Communities. • Originally, we were planning to propose two campaign concepts that communicate message and visuals and develop chosen concept into design pieces, copy and assets, not to exceed three design pieces in totality. However, this task was not completed because as part of our marketing review and plan development, we highlighted the importance of increasing visibility through logo and website upgrades first. The idea is that these two actions preclude and will inform the subsequent development and design of collateral materials.	Marketing Partners	April – May 2014
Implementation of Media / Outreach Campaign: The implementation of a media and outreach campaign in 2014 was experimental because the full strategic marketing plan was not completed until November 2014. We developed and implemented media strategies that included paid advertisements in local newpapers, bulletins and blogs, in addition to paid Facebook "boost" posting. We also used other free channels for media outreach with Twitter and Instagram. • *Please note that Intervale Food Hub-specific media and outreach implementation were paid for by the Intervale Food Hub through earned revenue and was used as a match for this Specialty Crop project.	IC staff	June – October 2014
Evaluation & Outcome Measurement: • Developed questions and implemented intercept interviews with consumers to determine their level of participation in the local food economy. We conducted quarterly surveys with our membership and quarterly check-ins with host sites.	IC staff	August & October 2014

• Measured media campaign placements; in 2014, we focused on analyzing Facebook metrics for engagement and data from paid advertising sources.		

GOALS AND OUTCOMES ACHIEVED

The measurable goal of this project was to nearly double the size of the Food Hub in five years. We proposed to increase sales from $400,000 in 2011 to $775,000 in 2017, as measured by annual sales figures. To achieve this goal, we needed to report $550,000 in sales at the end of 2014; to date, we have grossed $574,172 this year, demonstrating that we are on our way to achieving our long-term goal. This increase in revenue translated to increased revenue for specialty crop producers currently marketing product through the Intervale Food Hub; an oppportunity for new farms to sell through the Intervale Food Hub; more storage, processing and distribution infrastructure; and ultimately more Vermonters hungry for everything else local. The data gathered through this project will also be shared throughout Vermont with similar businesses, positively impacting their bottom lines as we grow the local foods "pie".

We completed the following deliverables:

- Best Practices to Enhance Workplace Food Culture Booklet
- Intervale Food Hub Strategic Marketing Plan
- Intervale Food Hub Creative Platform
- Planning Brief for new CMS Website

BENEFICIARIES

The primary beneficiaries of this project are the 30 specialty crop producers who sell products through the Intervale Food Hub. They have directly benefited from an increase in sales. In 2012, the Intervale Food Hub paid over $300,000 in farm accounts; in 2013, this figure rose to $342,000 and in 2014 $406,000.

This project is also having a greater impact, as we share what we have learned with other organizations and specialty crop producers engaged in similar marketing practices. To date, we have shared our findings with RAAFL and Vital Communities, and we will post materials to our website to make them easily accessible to food hubs nationwide. We have also shared the information we have learned through ongoing informal conversations at conferences, network gatherings, and working group meetings, as we collaborate with partners to develop statewide local food marketing strategies.

LESSONS LEARNED

This project has taught us a lot about project design and delivery. Understanding food culture is complicated, and influencing food culture is very difficult. It is important to set achievable goals and meet people where they are on the local food adoption curve. Though Vermont consumers really care about eating healthy and supporting Vermont farmers, it is important that accessing specialty crops is convenient and easy for people.

Visibility is our number one problem. We thought that we had built a solid brand, but through this project, we realized that there were underlying issues preventing us from really being visible in the marketplace. We look forward to implementing the identified strategies in our strategic marketing plan to build business awareness.

We also had the unexpected opportunity to update the Intervale Food Hub business plan in 2014. Staff struggled to build both a new plan and a strategic market plan simultaneously while continuing to operate the business successfully. That being said, the end results have been incredibly helpful and will determine how we move forward with how we develop our business on behalf of specialty crop producers.

CONTACT PERSON

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Project 9: Marketing the New Classifications of Vermont Maple Syrup – Final Report

PROJECT SUMMARY

The final form which this project took – focusing on digital marketing of Vermont maple syrup via social media – came about because of two distinct delays: The first delay occurred around using our existing website and Content Management System (WordPress Pro) due to concerns from potential website and graphic design vendors about WordPress being an open source platform. This in turn led potential vendors to require costs that would have quickly exceeded the budgetary constraints of the initial project. While the open source nature of WordPress Pro can lead to challenges, we have assessed that the benefits, namely high customizability and ease of operation, outweigh the negatives.

The second delay was due to in-house delay around the hiring of a staff person who could adequately manage the work for this project. With that staff person hired, the project was able to be implemented.

The final project was built on the idea that we would be able to better leverage SPCBG resources by using grant monies to partially fund our Marketing Manager who is responsible for managing social media as well as the VMSMA website and graphic design. Dedicating the time to managing our social media within this project would help to create greater levels of interaction through timely responses using social media, giveaway contests to drive engagement, and website promotions.

Our project was originally designed to use Facebook in three ways: Boosting Posts, Newsfeed Advertisements, and in running contests. We ultimately decided that focusing more on Boosted Posts and contests would help us focus on one larger goal: achieving a greater number of Likes and audience engagement. Newsfeed Ads are great for businesses or organizations who have a specific call to action such as buying a product, signing up for a newsletter, or other similar action. Since VMSMA does not directly sell product and we do not currently have a consumer-oriented newsletter, on further reflection the use of Newsfeed Ads seemed to be less important.

PROJECT APPROACH

The approach we used was to develop a basic guideline for posts which was submitted in December 2015. This laid out a rough editorial calendar which we worked with over the course of the grant and adjusted as necessary.

Content was curated and created throughout the span of the project. The Marketing Manager worked on the following:

- Development of editorial calendar
- Creating content for Facebook posts
- Setting up the boosted posts through Facebook Ads Manager
- Monitoring Facebook and Twitter and responding to posts as needed and as appropriate
- Create original recipes for the VMSMA website, including preparing dishes and photography
- Posting recipes on the VMSMA website (vermontmaple.org/recipes)
- Explore management programs for holding contests via social media

- Creating contests, responding to contestants, follow-up with winners/recipients to send prizes
- Gathering and analyzing data

GOALS AND OUTCOMES ACHIEVED

Original Goals/Performance Measure/Benchmark/Target (10/2013)

Goal	Performance Measure	Benchmark	Target
Online advertisements, such as Facebook ads or boosted posts	Click Through Rate (CTR)	No current data	0.05 CTR
Launch unique landing pages tied to each online advertisement	Conversion rate (email opt-in)	No current data	1000 unique visitors per month of campaign with 5% conversion rate
Hold two contests via Facebook to develop content	Online engagement levels; shares, likes, conversion rate	No current data	Significant interaction with Facebook community

The following represents an explanation and/or data for each of the three Goals listed above:

Goal #1: Use of Online Advertisements

We focused on boosting Facebook posts as a way to drive increased engagement on our Facebook page. Here are some results from the grant period. The column labeled "Sept-Nov 2015" represents a three-month baseline when our Facebook page was active but no grant funds were spent on boosting posts; the Campaign column represents all posts during time when we boosted posts (12/1/2015 – 9/5/2016); and the Change column shows the percent change during the Campaign period:

CTR – Click-Through Rate

	Sept – Nov 2015	Campaign	Change
Average	0.024	0.024	0%
Median	0.019	0.015	-21%
High Post	0.031	0.036	52%
5th Highest Post	0.024	0.032	33%
10th Highest Post	0.024	0.020	-17%

We fell short of our target of 0.05 CTR but saw a small increase in our posts that had high engagement as seen in both the High Post (meaning the highest engagement post) and the 5th-Highest Post. Boosted posts during the campaign averaged a 0.053 CTR but that improvement did not carry through to non-boosted posts during the Campaign period.

Reach (the number of unique people who see content)

	Sept – Nov 2015	Campaign	Change
Average	8,571	74,089	764%
Median	4,857	68,752	1316%
High Post	56,414	194,471	245%
5th Highest Post	15,017	126,584	743%
10th Highest Post	7,738	94,807	1125%

As the numbers show above, our Reach increased at phenomenal rates during the time that we were actively boosting posts. During the Campaign period, we boosted 42 posts, roughly less than half of all posts during that time. The post with the tenth-highest reach during the Campaign was nearly double that of the highest during the pre-Campaign period.

Impressions (number of times a post from your Page is displayed)

	Sept – Nov 2015	Campaign	Change
Average	14,587	107,838	639%
Median	8,017	96,079	1098%
High Post	102,380	301,242	194%
5th Highest Post	25,107	179,313	614%
10th Highest Post	12,815	154,453	1105%

Impressions increased at a rate similar to Reach. Of particular note that is posts during Campaign, the post with the 10th-highest impressions registered 50% more impressions than the highest post during the pre-Campaign period.

Clicks (the amount of times a post was clicked on)

	Sept – Nov 2015	Campaign	Change
Average	355	2,437	587%
Median	155	1,669	980%
High Post	3,161	14,115	347%
5th Highest Post	609	4,127	578%
10th Highest Post	302	3,046	909%

Clicks were also up during the Campaign period but to a lesser degree than both Reach and Impressions. This is reflected in the relatively static CTR which is calculated by dividing Clicks by Impressions.

Other information that was interesting for us to review as we establish best practices for managing social media was to see what types of posts did particularly well during the Campaign period. Posts that featured original recipes (which were posted to the VMSMA website) were a clear leader Clicks while having the second-highest Reach; posts featuring a contest had the highest Reach and relatively high Clicks. Posts that featured a use for maple syrup and directions to our website in order to visit our member directory for purchase of syrup or other maple products also did quite well in both Reach and Clicks.

Another measure that is worth noting is that we began the Campaign period with 80,019 page Likes and concluded with 88,940 page Likes, an increase of over 11%.

Goal #2: Launch unique landing pages tied to each online advertisement

This goal was not accomplished as it was part of the original work plan before the Change of Scope submitted in December 2014.

Goal#3: Hold two contests via Facebook to develop content

We held two contests on Facebook during the Campaign period, one asking our Fans to choose the best breakfast food to showcase maple syrup and another asking them to submit their best photo featuring a maple creemee (maple soft-serve ice cream). In order to run a contest, we chose to purchase a one-year subscription to WooBox which helps to easily create a range of different style contests to be run on social media. We will be using this in the coming holiday season and into sugaring season next spring.

	Creemee Photo Contest	Breakfast Poll	Total
Visits – *the # of unique visitors to our page for the promotion*	4,666	2,691	7,357
Entries/Votes – *the total # received*	60	463	523
Likes – *the # of likes on our page that have occurred from our promotion*	36	54	90
Shares – *the # of entrants that share contest by posting the URL on their own wall/timeline*	7	75	82

It is interesting to see that our photo contest received a much higher number of Visits but a far lower number of entries when compared to the total votes cast in the breakfast poll. In both contests, the prize was a chance to win a pint of maple syrup, so the prize was the same. The most likely explanation is that the photo contest required more out of the contestant as they had to submit a photo rather than clicking through several contest questions.

BENEFICIARIES

The beneficiaries of this project include all of Vermont's maple sugar makers and specifically members of VMSMA. USDA's 2012 Ag Census counted 1553 farms in Vermont producing maple syrup, an increase of 18% over the 2007 Ag Census data. Over that same time frame, syrup production has nearly doubled in Vermont. It is difficult to put a precise, or even estimated, economic value on this project. Vermont's 2014 maple syrup crop was estimated by USDSA-National Agricultural Statistics Service to be valued at $44,550,000 but that price only reflects an average price per gallon for ALL Vermont maple syrup, over 80% of which is sold as bulk syrup that will eventually reach national and international markets. That amount of bulk syrup, sold at a lower per-gallon price to the farmer, sets the bar artificially lower. That same 2014 production sold at a retail price of $16 per pint would realize a value in excess of $170,000,000.

Members of VMSMA are reminded in newsletters and other communication with members about the association Facebook page. These sugar makers are able to share or repost the content that VMSMA posts, providing them with content that pertains to maple syrup. Cultivating an active following on Facebook requires frequent posting and creating content is probably the most common challenge faced by a small business or organization. The work of this project helped to provide ready-to-use content, helping maple producers to have more regular content on their Facebook page.

LESSONS LEARNED

One of the most significant lessons learned through this project is probably the simplest: that in order to maximize social media at anywhere near its fullest potential, a great deal of time (or monetary resources) is required to be dedicated to that pursuit. While we initially budgeted 10 hours per week for 45 weeks (approximately 11/1/2015 through 9/15/2016), we found that it took closer to 12 hours per week. Given the high volume of engagement we see on posts, especially those that were boosted, more time was required to adequately engage with our audience. This interaction then has a "boosting" effect as it helps Facebook's algorithms choose to serve our posts more frequently. In short, social media gives the more you give, and this can only be accomplished by spending time in cultivating that interaction. As a result, in future marketing campaigns and efforts, we will be budgeting more than we have in the past toward the implementation of that campaign on social media.

We identified that posts featuring original recipes tend to have the most audience engagement and has the benefit of driving that audience to the VMSMA website, where they can learn more about Vermont maple syrup and find ways to purchase maple products from VMSMA members. This intuitively makes sense as we are always marketing food products in one way or the other. Creating recipes and capturing high-quality photos of a finished dish takes significant amounts of time (or money if hiring a consultant) but seems to be worthwhile. We will be exploring ways to fund more recipe development as it provides great content for the website and social media as well as providing a tangible and useful benefit to VMSMA members.

Contests seem to be a useful tool for generating additional interaction on social media. Both photo contests and quizzes seem to have their place, as photo contests can yield some usable content in the way of photos and seems to generate traffic as people look at the photos that are submitted. On the other hand, quizzes receive higher levels of participation and could be a better use if a particular outcome or course of action is desired.

CONTACT PERSON

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Project 10-A: Marketing Assistance for Value-Added Producers – Final Report

PROJECT SUMMARY

Vermont's Specialty Food industry has grown significantly over the past decade, as many Vermont specialty crop producers have explored creating value added products. Jams, jellies, chutneys, tomato sauces, salsas, maple products, juices, and other products have had great success in the local marketplace, and these companies are increasingly exploring national and international distribution channels.

This project had two primary components:

1. Showcase Vermont specialty food products made with at least 50% specialty crops (by weight, exclusive of added water) at the Summer Fancy Food Show in New York

2. Educate specialty crop producers about market opportunities in Canada

This project was important because as Vermont markets become increasingly saturated, Vermont specialty crop and value added producers need access to out-of-state markets. This project assisted with making direct contacts with buyers, as well as providing education about the Canadian market, Vermont's closest international trade partner.

PROJECT APPROACH

Agency staff partnered with the Vermont Specialty Foods Association on a promotion at the 2014 Summer Fancy Food Show – an annual, signature event in the specialty foods industry. There were 14 exhibitors in the Vermont Pavilion. In addition, 14 more Vermont companies were sprinkled throughout the trade-show floor, making for a total Vermont presence of 28 exhibitors at the show.

To highlight Vermont specialty crops, the Vermont Specialty Foods Association and Vermont Agency of Agriculture hosted a chef-led demonstration of how to create food that's healthy, wholesome and natural – consistent with the quality of life Vermont is globally known for. At Booth #5030, award-winning Vermont Chef Sean Buchanan prepared signature recipes featuring an array of products, from jams and jellies to pure Vermont maple syrup. Additionally, staff promoted Vermont agritourism, encouraging visitors to plan their trip at www.DiginVt.com. Specialty Crop Block Grant funding was matched by the Vermont Dairy Promotion Council and the Vermont Specialty Food Association.

Additionally, funding supported an export seminar entitled "Tapping into the Canadian Market." All of the business participants made products that consist of at least 50% specialty crops, including maple products, salsas, and dried jalapeno chips. Funds were used to bring in a Canadian market specialist who could provide technical assistance and market intelligence to specialty crop producers interested in accessing customers north of the border.

These activities were implemented in close partnership with the Vermont Specialty Food Association and Food Export-Northeast. These partnerships allowed us to leverage other funding sources including the USDA Market Access Program.

GOALS AND OUTCOMES ACHIEVED

The goals of this project were surpassed.

Goal	Performance Measure	Target	Actual
Increased recognition of the quality of Vermont value added specialty crop products by showcasing products at the Summer Fancy Food Show	Number of plates served over the 3 days of the show	1000 plates served	Approximately 1,075 plates served.
	Sales performance among value added companies – data collected at 6 and 12 months after the show	At least 5 companies report 5% increase in previous year's sales	8 companies reported that the activity helped them increase sales by at least 5%.
Increased export sales by Vermont specialty food producers	Attendance at Export Seminar	5 companies participate in Export Seminar	6 companies participated in the Export seminar

BENEFICIARIES

The direct beneficiaries of this project were the 14 exhibitors in the Vermont Pavilion, the 14 additional exhibitors at the Summer Fancy Food Show, and the six seminar participants. However, the promotion of Vermont specialty crops at the Summer Fancy Food show enhanced the Vermont brand generally, creating inroads for other Vermont producers with the buyers in attendance.

LESSONS LEARNED

Although the Canadian market is close in proximity, it can be a difficult market for Vermont specialty crop producers to break into. With the US dollar currently strong, our producers are at a relative disadvantage. Additionally, maple, our premier specialty crop, has Canadian maple as it's major competitor.

CONTACT PERSON

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Project 10-B: Enhancing the Competitiveness of New England Specialty Crops Through Regional Collaboration – Final Report

PROJECT SUMMARY

The awareness of New England grown specialty crops by wholesale buyers and institutions in the region is limited. This project aimed at increasing the awareness of regionally grown specialty crops with wholesale buyers and institutions along with improving specialty crops producers' ability to meet the wholesaler and institution's demands, enabling them to sell more specialty crops through wholesale distribution. This was accomplished through two components:

Component 1, Producer Education: providing scholarships to specialty crop producers to attending the 2015 Harvest New England Agricultural Marketing Conference and Trade Show. Here, specialty crop producers are educated on how to establish connections with and respond to the requirements of wholesale buyers.

Component 2, Producer Buying Opportunities: connecting wholesaler buyers with wholesale specialty crop producers through a one-on-one matchmaking meetings.

The importance of regional wholesale buying for the purposes of sales to school, institutions, and restaurants is ever present and an increasing priority for each of the New England states. Producers, consumers, and wholesalers now need the education and the knowledge to advance to the next level. This will be accomplished by increasing the marketing skills, networking, public awareness, and buying opportunities of New England specialty crop producers and their products.

The Harvest New England Agricultural Marketing Conference and Trade Show was previously funded by the Specialty Crop Block Grant Program. This funding provided in 2014 was successful due to the previously established reputation of the HARVEST NEW ENGLAND Conference and the benefit it provided to attendees and the region. The main difference between the previously funded conference and the conference in 2015 was the specific topic of focus. The focused area in 2011 and 2013 was direct to consumer sales. The focus was shifted to wholesale marketing opportunities and challenges as a result of the need expressed by the industry. New speakers, new tracks, and new seminars and workshop were provided to attendees.

PROJECT APPROACH

Component 1: Funding from the Vermont Agency of Agriculture, Food and Markets went towards supporting specialty crop farmers from New England so they may attend the 2015 HNE Ag Marketing Conference and Trade Show to educate themselves on ways to modify a variety of their practices to meet the demands of wholesale and institutional buyers.

Planning for the conference began in 2014 and discussion of the scholarship program for specialty crop producers started in December 2014. In early January, information was released throughout the region by all of the six New England state departments of agriculture. The extent of the promotion in each state varied. Most included email distribution, information in an agency publication, on agency websites and communication to specialty crop commodity associations in each state. Information was also posted on the Harvest New England website and distributed to all previous conference attendees.

Applications were submitted to the Vermont Agency of Agriculture, Food and Markets where staff compiled and reviewed the information submitted. During a planning conference call, the applications were reviewed and a motion was made to award 31 scholarships to specialty crop producers in Connecticut, Massachusetts, and Maine.

It was disappointing we did not have scholarship recipients from each state. A lot of that could be attributed to the majority of conference attendees are from Connecticut and Massachusetts with limited participation from Vermont, Maine, New Hampshire, and Rhode Island. Regardless, it was determined that outreach could be improved by release the information sooner.

To ensure that only specialty crop producers were awarded a scholarship, a question was asked if they were a specialty crop producer. Only those that said they were, were considered for a scholarship.

This project would not have been successful without the partnership between the six New England State's and the Vermont Agency of Agriculture, Food and Markets contribution to the administration of the program.

Component 2: In October 2015, the Harvest New England board began discussions for the buyer/supplier one-on-one meetings. It was determined three of the five meetings would be held in 2016. One of which included a

Vermont meeting executed by the Vermont Agency of Agriculture, Food and Markets representing Harvest New England.

One-on-one specialty crop buyer and supplier meetings were organized in partnership with the Vermont Fresh

Network. The meetings were held on April 29, 2016 from 1:00-5:00 pm. Due to the extensive organization by the Vermont Fresh Network, the Vermont Agency of Agriculture, Food and Markets supported the outreach efforts and execution of the event, stressing the importance of specialty crop producers' participation, however, no Specialty Crop Block Grant funds were expended.

Of the 54 supplies, 24 were specialty crop producers. Of the 26 buyers, 21 were looking for specialty crops. A follow up survey was issued and producers reported 130 sales leads and approximately $850,000 is sales resulted from participation in the event. 75% reported establishing a new buyer/selling relationship.

In review of the one-on-one meetings, it was discussed how Specialty Crop Block Grant funds could have added to the event to encourage more specialty crop producer participation. Fortunately, the project was executed and accomplished due to the Vermont Food Network, despite the drawdown of funds.

OUTCOMES ACHIEVED

	AWARDED	ACTUAL
GOAL	To educate specialty crop producers and provide buying opportunities between specialty crop producers and wholesale	We certainly reached our goal of educating specialty crop producers and providing buying opportunities between specialty crop producers and wholesale buyers with the intention of

	buyers to increase sales and consumption of New England grown specialty crops.	increasing sales and consumption of New England grown specialty crops.
PERFORMANCE MEASURE	Each component will have a specific performance measure to ensure the overall goal is met. *Component 1:* Specific questions on the evaluation form asking if specialty crop producers are better aware of how to work with wholesalers and institutions and market their specialty crop products as a result of attending the conference. *Component 2:* The number of wholesalers and New England producers who participate in the one-on-one buying meetings and follow up survey results afterward.	*Component 1:* A question was added to the conference evaluation specific to wholesale buying and purchasing. 64% of survey respondents, which included scholarship recipients, reported they had a better understanding of how to work with wholesalers and institutions and market their specialty crops as a result of attending the conference. *Component 2:* A follow up survey was distributed, and specialty crop producers reported more than 130 sales leads and an estimated $850,000 in sales due to matches made at the event. 75% of producers reported a new buyer/seller relationship as a result of attending.
BENCHMARK	We know in 2013, 78% of respondents at the Harvest New England Conference said they had an increase in sales as a result of new techniques learned at the conference and a similar consumer education project was done in 2013 and 1,325 people participated, however, there is no benchmark data for the one-on-one buyer meetings. Once registration for the event is complete we can obtain an understanding of how many of the wholesalers are either buying and distributing New England grown specialty crops and how many producers are currently selling to wholesale houses for regional distribution through a pre-event survey.	*Component 1:* In 2015, 47.96% of survey respondents reported attending a previous Harvest New England Conference. 77.5% of them reported that as a result of attending the conference, they had an increase in sales as a result of knowledge gained at the conference. *Component 2:* A pre-event survey was not distributed to participants but 21 buyers were actively looking for specialty crops.
TARGET	Overall, there will be a 15% increase in the amount of New England grown product consumed and purchased.	Due to the unavailable 2015 data from the New England Agricultural Statistics Service, we cannot accurately measure a change in sales from 2014 To 2015 at this time. However, the outcomes from each component indicate there is a like increase in the amount of New England grown product consumed and/or purchased.
MONITORING PLAN	Each component will have its own monitoring plan to ensure the target of the project is achieved: *Component 1:* A survey will be conducted after each conference.	*Component 1:* This was completed and the 2015 information, as it relates to the scholarship program and otherwise, are being taken into consideration for the 2017 conference.

	Feedback from the 2015 survey will be assessed and any necessary changes will be implemented for the 2017 conference. *Component 2:* Materials on how to prepare for the one-on-one meetings will be created and distributed to both the wholesale buyers and specialty crop producers prior to the meeting(s) so both parties can be prepared and come ready to make a sale. Results and outcome of the first meetings will be reviewed and assessed so changes can be made for future meetings.	*Component 2:* The pre-meeting survey was not completed however, the follow up survey results showed favorable outcomes as a result of the one-on-one meetings that took place.

Major successful outcomes in quantifiable terms:

Component 1: According to survey respondents, the benefits of attending the 2015 Harvest New England Conference are extensive including:

- 58.33% of people said it was a great or really great conference
- 36.08% of people said their knowledge improved quite a bit or even a ton as a result of attending
- 64% of people said they are better aware of how to work with wholesalers and institutions as result of attending
- 16.87% were socially disadvantaged farmers and 19.12% have been faming for less than 10 years

Component 2:

- Producers estimated $850,000 in sales due to matches made at the event
- 72 one-on-one meetings took place between specialty crop producers and wholesale buyers looking for specialty crops
- 90% of producers reported moderately or strongly agreeing that the event met their expectations
- 75% of producers reported stating a new buyer/selling relationship as a result of the event

BENEFICIARIES

Component 1: Specialty crop producers that have not participated in the Harvest New England Conference or someone that has in the past but cannot afford to participate have been the primary beneficiates of the scholarship program. We were fortunate to award 31 scholarships, which is more than in previous years, due to Specialty Crop Block Grant Program funding. This can be interpreted far beyond just the 31 farms to the farms buyers, customers, and families.

Component 2: Both specialty crop producers and wholesale buyers and their customers are the beneficiaries of this program. The Vermont Food Network, Harvest New England, and the Vermont Agency of Agriculture, Food and Markets continue to foster a relationship for future partnerships to advance specialty crops within the region.

LESSONS LEARNED

Component 1: Outreach is key to the success of the scholarship program. We could have awarded more scholarships but did have enough qualifying applicants. Had the outreach been more extensive at the state level, there would have likely been more applications to be considered. In the future, Harvest New England will leverage and engage partners to promote the scholarship availability.

Component 2: It's impressive the -ne on-ones were executed with such a cost-conscious budget. In the future, with the addition of the Specialty Crop Block Grant funds, more baseline information could have been obtained and awareness to specialty crops could have been present. Much of the challenges come down to communication, understanding everyone's roles and responsibilities. Fortunately, Harvest New England and the Vermont Agency of Agriculture, Food and Markets were able to be involved in the event despite the lack of drawdown of funds for the project.

CONTACT PERSON

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ADDITIONAL INFORMATION

The 2015 Harvest New England Conference scholarship application is copied below.

The Harvest New England Ag Marketing Conference and Trade Show
Making "Cents" in Today's Marketplace

February 25 & 26, 2015
Sturbridge Host Hotel, Sturbridge, MA

SCHOLARSHIP INFORMATION & APPLICATION

Harvest New England is pleased to offer scholarships to qualified producers of specialty crops from New England to attend The Harvest New England Agricultural Marketing Conference and Trade Show, February 25 and 26, 2015 in Sturbridge, Massachusetts.

Definition of Specialty Crop:
Specialty crops are defined as fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops. Eligible plants must be intensively cultivated and used by people for food, medicinal purposes, and/or aesthetic gratification to be considered specialty crops.

Scholarships will cover the cost of conference registration for up to two attendees from the same family or farm. Recipients will be responsible for any additional costs such as travel or hotel costs associated with their attendance.

Priority for scholarships will be based on the following criteria:

- Specialty crop farm
- New farm (in business for less than 5 years)
- Young Farmer (under age 35)
- Distance of travel to conference – those traveling from a greater distance
- Other demonstrated need

In order to be considered, please submit the attached application via email or U.S. mail **by February 1, 2015** to:

Faith Raymond
Vermont Agency of Agriculture, Food & Markets
116 State Street
Montpelier, Vt 05620
Phone: 802-828-1619
Faith.raymond@state.vt.us

Recipients will be notified by February 13, 2015

Funding provided in part by the USDA Specialty Crop Block Grant Program

SCHOLARSHIP APPLICATION

Name: _____

Name of Second Person (if applicable) _____

Farm Name: _____

Mailing Address: _____ **City, State, Zip:** _____

Phone: _____ **Fax:** _____

E-mail: _____

Website:

Is this the first time attending the Conference? ☐ Yes ☐ No

Which of the following criteria do you meet (please bold):

Specialty Crop Farmer
New Farm (in business for less than 5 years)
Young Farmer (under age 35)
Distance of Travel

If 'Other' please elaborate:

Please answer the following questions:

Why is it important that you receive a scholarship to attend the conference?	
What opportunities does the conference offer you or your business?	

In order to be considered, please submit the attached application via email or U.S. mail **by February 1, 2015** to:

Faith Raymond
Vermont Agency of Agriculture, Food & Markets
116 State Street
Montpelier, Vt 05620
Faith.raymond@state.vt.us

Funding provided in part by the USDA Specialty Crop Block Grant Program

Project 11: Produce Industry Support for FSMA Implementation

PROJECT SUMMARY

The objective of this project was to enhance the competitiveness of Vermont specialty crops by providing support to fruit and vegetable growers who are preparing for implementation of Food Safety Modernization Act (FSMA) final rules through (1) providing opportunities to learn about the rules and ask questions of FDA subject matter experts and by (2) offering the opportunity for farmers to participate in On-Farm Readiness Reviews (OFRR) to determine their level of preparedness for FSMA implementation and any infrastructure/upgrades that may be necessary.

This project proposed to support Vermont's produce industry in preparation for implementation of the Food Safety Modernization Act (FSMA) Produce Safety Rule through two activities:

1. Host FDA subject matter experts and Deputy Commissioner for Food & Veterinary Medicine Michael Taylor at a regional public meeting held in Brattleboro, Vermont, where farmers, service providers, and state government officials can learn about final FSMA rules in greater detail and ask questions of FDA.

2. Support a Food Systems Team Assistant to assist the Vermont Agency of Agriculture in its pilot of On-Farm Readiness Reviews (OFRR) to determine the level of industry preparedness for Produce Safety Rule implementation. The Vermont Agency of Agriculture has partnered with the Middlebury College FoodWorks program over the past two years to host a summer FoodWorks intern at the Agency. In previous years, Middlebury has waived the Agency's cost-share fee out of recognition of the value that internship placement at the Agency contributes to the FoodWorks Program. Beginning in 2016, however, the Agency has been asked to contribute a cost-share fee. SCBGP funded 43% of the intern's time.

PROJECT APPRAOCH

The regional public meeting was held in Brattleboro, Vermont and advertised throughout the Northeast. This is the only FSMA roll-out meeting that FDA attended in the Northeast and served as an important opportunity for farmers, service providers, and state agency staff to ask questions about FSMA compliance and receive answers directly from FDA.

After the regional public meeting, the Vermont Agency of Agriculture hosted three listening sessions for the produce industry at different locations within Vermont (Montpelier, Burlington, and Rutland) to share what we had learned from FDA with farmers who cannot attend the Brattleboro meeting. At these meetings, we also discussed the development of a Vermont State Produce Safety & Market Access program to meet the industry's needs during and after FSMA implementation.

Lastly, Produce Safety Coordinator Kristina Sweet also presented on FSMA at an event hosted by a reginal organization, Addison County Relocalization Network (ACORN), which was attended by 25 producers and service providers. Participation in this event provided us with the opportunity to reach growers in Addison County who were unable to travel to our listening sessions (in Washington, Chittenden and Rutland Counties).

We planned for the FoodWorks intern work 12–14 hours/week for 8 weeks between June 1 and August 31, 2016 in support of the Vermont Produce Safety & Market Access Program by conducting outreach to farmers about the opportunity to participate in the OFRR pilot, assisting Agency of Agriculture staff in conducting OFRR, and completing an analysis and report showing the level of preparation for Produce Safety Rule compliance and estimated infrastructure/upgrade costs for farms. Unfortunately, we received notification the team of FDA, state department of agriculture, and university extension staff engaged in the development of the OFRR would not be ready to test the tool by June. While Vermont will still participate in the OFRR pilot, the tool is still under development, and Vermont's pilot readiness reviews will not take place until June 2017.

GOALS AND OUTCOMES ACHIEVED

All sessions from the regional public meeting in Brattleboro were audio recorded and posted on the Vermont Agency of Agriculture's website (agriculture.vermont.gov) along with FDA's PowerPoint presentations. Although we did not meet our goal of 135 attendees, we did exceed attendance at the previous meeting where we hosted FDA to discuss FSMA (held in November 2014 at Vermont Law School). Attendees included farmers, food producers and distributors, university extension, federal agencies (including the regional FDA office, the Farm Service Agency, and the Natural Resources Conservation Service), state agencies and departments of agriculture, and the National Sustainable Agriculture Coalition. All New England states as well as New Jersey were represented.

As reported above, we experienced a delay in development of OFRR materials and execution of the pilot program for testing the tool. (Vermont will still host an OFRR pilot in June 2017.) Middlebury FoodWorks intern Jennifer Hooper assisted the development of our produce safety program by analyzing the results of our online survey for Vermont growers to determine whether they are covered under FSMA and assess current on-farm food safety practices (www.surveymonkey.com/r/vtfsma), providing a list of key grower questions that we will utilize for the development of fact sheets and other informational materials.

Additionally, Jennifer played a key role in the development of a Vermont Specialty Crop Block Grant Program highlights report, a project begun by previous interns, which presents details on SCBGP investments and successes in the first ten years of the program in Vermont. This report will be published in early 2017 to coincide with the release of our request for proposals. The goal of this publication is to share information about the Vermont SCBGP throughout the state and encourage a broader range of applicants, especially producer-led groups.

Jennifer also supported Vermont specialty crop producers and consumers by pitching in to complete weekly Market Pricing Reports when the Agency of Agriculture's Market Reporter needed to take an unexpected leave of absence. (The Vermont Agency of Agriculture, Food, and Markets Local Food Data Tracking program collects weekly pricing data of local foods seasonally available at Vermont farmers' markets across the state.) Jennifer's work on this project was partially funded through a separate source, ensuring that SCBGP funds were used solely to report on specialty crops. This weekly report helps producers to set competitive prices and helps consumers to compare prices and make strategic purchasing decisions.

Lastly, Jennifer organized an Agency service day at the Vermont Youth Conservation Corp's Richmond, VT farm, where staff supported access to specialty crops by packing 300 Health Care Shares—boxes of

fresh produce—distributed to food-insecure Vermonters. The Health Care Shares program serve 1,000 individuals weekly, allowing families to prepare well balanced meals in their own homes.

The original goals, performance measures, benchmarks, and targets are outlined in the table below, along with outcomes achieved.

Goal	**Performance Measure**	**Benchmark**	**Target**	**Outcome**
Farmers, service providers, and state government officials prepared for FSMA Produce Safety Rule (PSR) implementation	Attendance at New England Public Meeting with FDA, a regional event advertised throughout the Northeast -- Farmer attendance at VT listening sessions	90 attendees (average attendance at previous meetings with FDA hosted by the Vermont Agency of Agriculture) -- No current data	135 attendees (50% increase) -- 125 farmer attendees	100 attendees -- 75 attendees (including farmers and service providers) at 3 VAAFM workshops & 1 ACORN workshop
Farmers prepared for FSMA implementation by participating in On-Farm Readiness Reviews (OFRR) pilot	# of farms participating in OFRR pilot	3 farms (FDA target for VT as a pilot state)	10 farms, representing an estimated 5–6% of farms that may be subject to inspection under the PSR	OFRR pilot delayed nationally until 2017
On-Farm Readiness Reviews - Outreach	# of farms contacted about OFRR opportunity	No current data	75 farms, representing an estimated 37.5– 50% of farms that may be subject to inspection under the rule	OFRR pilot delayed nationally until 2017
Determine farmers' level of preparation for PSR compliance through On-Farm Readiness Reviews	No current data	No current data	Produce report showing level of preparation for PSR compliance and estimated infrastructure/upgrade costs for farms	OFRR pilot delayed nationally until 2017

BENEFICIARIES

For Vermont produce growers, understanding how the FSMA Produce Safety Rule may or may not impact their particular farm will be key to future business viability.

The potential beneficiaries of this project include all of Vermont's estimated 1000–1200 farms growing produce covered under the FSMA Produce Safety Rule. (These estimates are based on 2012 Census of Agriculture data and may underrepresent the industry.) In addition to those who learned about their requirements under FSMA directly from FDA or the Agency of Agriculture as a result of this project, a greater number of producers have or will be reached by the service providers and government agency staff who attended either the regional FDA meeting or one of the three listening sessions.

Of these 1000–1200 farms, it's likely that at least 40% will be "not covered" (annual produce sales average less than $25,000/year), 45–50% will fall into the "qualified exemption" category, and around 15% will be fully covered (expected to comply with all provisions of the rule). We expect that between 150 and 200 farms will undergo inspections under the rule, and that at least 15 of these farms will need to comply by January 2018, the earliest compliance date for produce farms (except for those producing sprouts, which have only one hear after the rule's effective date to comply). However, an additional 400+ Vermont farms are likely to need to meet modified requirements under the rule, and even more may be impacted by FSMA's effect on wholesale buyer demands for food safety certifications.

LESSONS LEARNED

Although the regional meeting offered the opportunity for Vermont producers to engage with FDA directly, it can be difficult to persuade farmers and other producers to take a day off from their business to attend a government meeting—especially when travel is involved. While we were pleased that several produce growers local to the Brattleboro area did attend, providing up-to-date information about the roll-out of significant federal rules to those who work directly with producers—such as staff from state and federal agencies and university extension services—will ultimately serve a far greater number of producers.

Similarly, we saw greater attendance at our three listening sessions by service providers than by producers themselves. However, Produce Safety Coordinator Kristina Sweet did receive positive anecdotal feedback from producers who attended the Rutland and Burlington sessions when meeting producers at other events throughout the state. It is also likely the case that the Agency of Agriculture and University of Vermont Extension staff have successfully reached most of the growers who are likely to be proactive about the FSMA Produce Safety Rule through other events and online resources. (Indeed, the current president of the Vermont Vegetable & Berry Growers Association asked Kristina if the sessions would provide much new information for those growers who have been engaged with FSMA throughout the rulemaking process.) It may take additional effort and alternative strategies to engage growers who are less involved with industry organizations—or who wish to avoid implementing new federal standards until they are absolutely required to do so.

CONTACT PERSON

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Kristina Sweet, Senior Agriculture Development Coordinator, Vermont Agency of Agriculture
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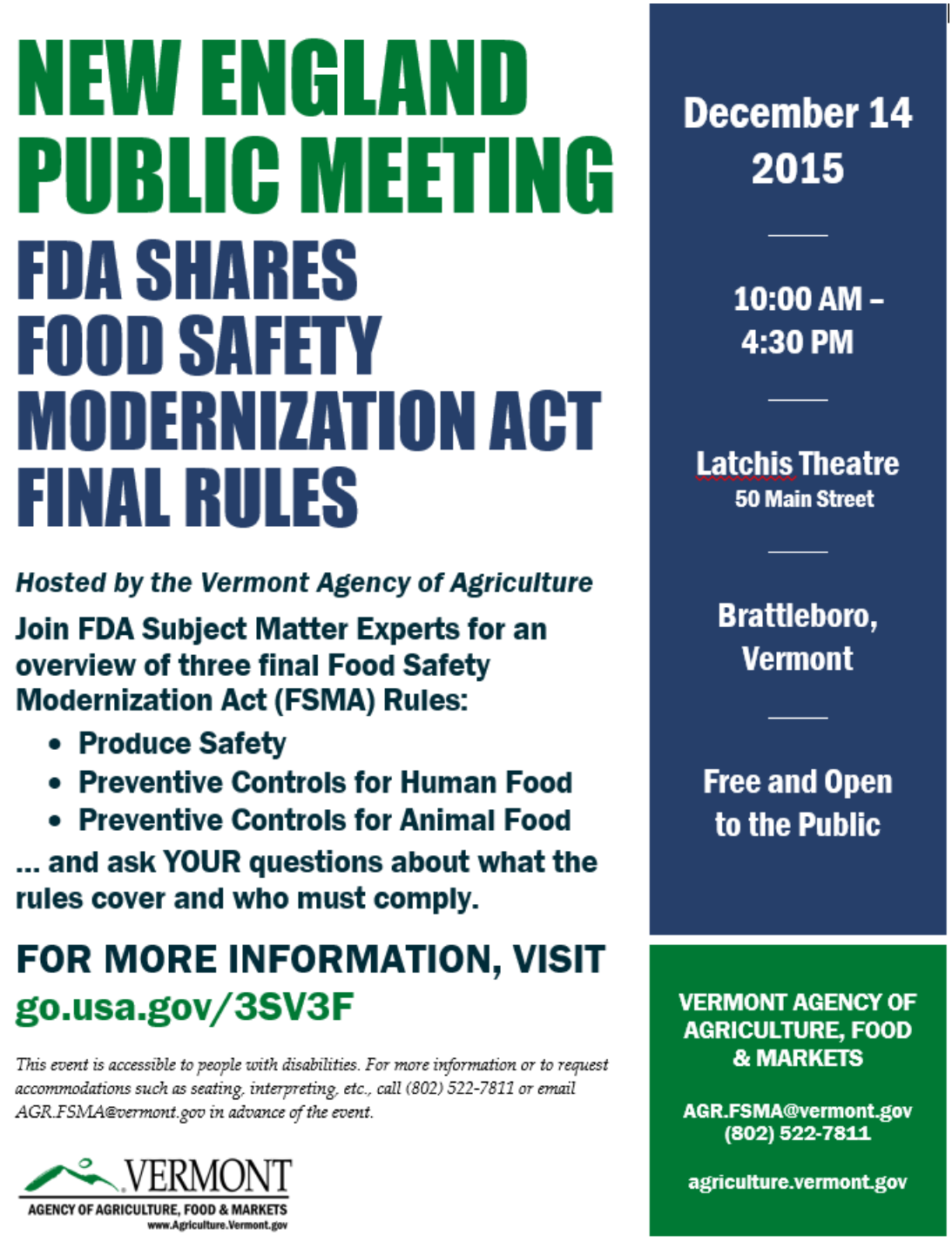
ADDITIONAL INFORMATION

Flyer advertising New England Public Meeting:



Project 12: Vermont Specialty Crop Marketing Support

PROJECT SUMMARY

Harvest New England (HNE) completed the final component of Project 10-B, "Enhancing the Competitiveness of New England Specialty Crops through Regional Collaboration" without expending all budgeted funds. In September 2016, we requested to reallocate these funds to a new project, "Vermont Specialty Crop Marketing Support."

The objective of this project was to build an archive of Vermont specialty crop photographs to be utilized in digital and print marketing and to implement a social media campaign to market Vermont specialty crop producers at the Eastern States Exposition (commonly known as the "Big E") via Facebook ads and boosted posts.

This project addressed the need for effective visual marketing tools for promoting Vermont specialty crop producers in digital and print marketing materials produced by the Vermont Agency of Agriculture. The Agency has lacked a sufficient archive of professional, print-quality photos for use in both digital (Facebook, Twitter, and website) and print materials (including brochures, reports, and advertisements). A photo archive of Vermont specialty crops, Vermont specialty crop producers, and consumers interacting with Vermont specialty crops will vastly improve our ability to visually represent and effectively market specialty crops and their producers.

September 2016 marks the 100th anniversary of the "Big E" Fair at Eastern States Exposition in West Springfield, MA. This milestone fair, which runs from September 16th through October 2nd 2016 will be the largest celebration of New England agriculture in history. The Vermont Building on the Avenue of States will once again be a main attraction for over 1 million fairgoers who return year after year to eat, drink and shop the best Vermont has to offer. The goal of the Facebook marketing campaign was to provide an opportunity for Vermont specialty crop producers to build relationships with out-of-state consumers as well as help to strengthen the Vermont brand.

PROJECT APPRAOCH

We worked with Vermont-based photographer Ben DeFlorio (http://defloriophotography.com) to set up site visits with six farms producing fruits, vegetables, honey, and Christmas trees. In addition, DeFlorio visited three Vermont farmers markets and included some miscellaneous specialty crop photographs (selected by Agency of Agriculture staff) captured previous to the project. The archive of over 1,600 photographs—far surpassing our target of 300—represents a diversity of specialty crop products, geographic variability within the state, and operations at varied scales, from start-ups to established, commercial farms. DeFlorio's flexibility, willingness to travel, and enthusiasm for this project allowed us to far exceed our goal, providing us with a diverse and robust archive of print-quality photographs that will allow us to promote Vermont specialty crops and specialty crop producers long after the completion of this project.

The Agency of Agriculture shared twenty-one Facebook posts highlighting the Big E in general or Big E specialty crop producers. Due to a failure to closely monitor task delegation, these Facebook posts were not boosted/advertised to targeted audiences. No SCBGP funds were expended on this activity.

GOALS AND OUTCOMES ACHIEVED

This impetus for this project stemmed from identified needs for professional, print-quality photographs and marketing support for specialty crop producers at the Big E. The Vermont Agency of Agriculture is committed to this project in order to be able to effectively represent and market Vermont's diverse specialty crop producers and help to build relationships between producers and out-of-state consumers. In addition, this project allowed us to effectively utilize SCBGP funds that had not been expended by the project to which they were originally allocated in a manner that directly supports Vermont specialty crop producers.

GOAL	PERFORMANCE MEASURE	TARGET	OUTCOME
Improved visual marketing materials for promotion of Vermont specialty crops	Utilization of professional Vermont specialty crop photographs in digital and print marketing materials	Archive of **250–300** photographs of Vermont specialty crops and specialty crop producers. Photos will include images from 3 Vermont farmers markets and at least 9 Vermont farms. These photographs will be utilized in the Vermont SCBGP Highlights Report, Facebook ads/boosted posts, and the Vermont Agency of Agriculture website in Fall 2016. Photo archive will continue to be utilized after the end of the grant agreement and shared with the Vermont Department of Tourism & Marketing.	**1,686** photographs of Vermont specialty crops and specialty crop producers representing fruit, vegetable, honey, and Christmas tree producers in 8 towns and 4 counties. 6 farms and 3 farmers markets were visited. See table below for breakdown. SCBGP Highlights Report will be published in Winter 2017. Photographs will continue to be used on the Agency's website and social media accounts as well as print materials, to highlight Vermont specialty crops and specialty crop producers. A selection of photographs will be uploaded to the State of Vermont's Image Relay site, maintained by the Chief Marketing Officer, for use by other state agencies.
Increased recognition of and interest in Vermont specialty crop producers at the Big E among residents in and around Springfield, MA.	Number of clicks on Facebook ads and boosted posts	330 Facebook clicks (U.S. average for an investment of $215.49, according to the Salesforce Advertising Index Q3 2015.)	Posts were not boosted or advertised. See below.

Category	# of Photographs	Content	Town	County
Randolph Farmers Market	58	Mixed Specialty Crops	Various	Orange
L.H. Stowell & Sons	268	Christmas Trees	Brookfield	Orange
Green Mountain Girls	262	Vegetables	Northfield	Washington
Capital City Farmers Market	97	Mixed Specialty Crops	Montpelier	Washington
Liberty Orchard & Floating Bridge Market	209	Apples, Mixed Specialty Crops	Brookfield	Orange
High Meadows Farm	295	Vegetables	Putney	Windham
Full Plate Farm	198	Vegetables, Apiary	Brattleboro	Windham
Elmer Farm	299	Vegetables	Middlebury	Addison
Miscellaneous	56	Mixed Specialty Crops	Various	Various
Total	**1686**			

The Vermont Agency of Agriculture staff member in charge of the Big E recently left the Agency, before reporting on this project was completed. Based on an examination of The Vermont Agency of Agriculture's Facebook page (https://www.facebook.com/vtagencyofag) metrics, no Big E-related ads were boosted or advertised to Springfield, MA area residents. Because the team member who had planned to boost/advertise these posts has left, it remains unclear why this activity was not completed, and the amount budgeted for this activity ($215.49) was left unexpended.

However, analysis of the Big E Facebook posts that were drafted by the Vermont Agency of Agriculture's Communications Coordinator and shared via the Facebook page will allow us to establish benchmarks for future campaigns. The metrics below represent Facebook posts that highlighted the Vermont Building at the Big E in general or specialty crop producers in particular. Posts that highlighted non-specialty crop producers (for example, cheesemakers) were removed from the analysis.

Metrics for 21 Big E Facebook Posts Between 9/13/2016–10/2/2016	Total Count	Average/Post
The number of impressions of your Page post.	22,728	1,082.29
The total number of people your Page post was served to. (Unique Users)	8812	419.62
The number of unique people who engaged in certain ways with your Page post, for example by commenting on, liking, sharing, or clicking upon particular elements of the post. (Unique Users)	253	12.05
The number of people who clicked anywhere in your post.	110	523

BENEFICIARIES

The beneficiaries of the photo archive are Vermont specialty crop producers, including fruit, vegetable, maple, honey, hops, cider, wine, and Christmas tree producers. According to 2012 Census of Agriculture and current industry estimates, Vermont has over 1,000 farms that grow fruits and vegetables, over 3,000 maple producers, and over 100 Christmas tree producers in addition to numerous cider, wine and honey producers and a small but growing number of hops producers.

The beneficiaries of the Facebook marketing campaign are Vermont fruit, vegetable, maple, honey, hops, cider, and Christmas tree producers as well as nine Big E vendors who produce specialty crops including apples, cider, maple, beer (hops), vegetables, and value-added products.

LESSONS LEARNED

Having more time to plan and execute this project would have allowed to us to better represent seasonality in Vermont specialty crop production as well as capture photographs of maple production. Since maple production takes place in late winter/early spring, we were unable to include maple in the photo archive at this time.

Although no funds were expended to promote Big E posts, these metrics will allow us to measure our success in future campaigns involving boosted/advertised posts, as we will be able to understand the average return on investment per post. We will also work to monitor activities undertaken by internal staff members on Specialty Crop Block Grant Program projects more closely in order to ensure that all proposed work is completed and budget funds are expended.

CONTACT PERSON

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ADDITIONAL INFORMATION

Example of specialty crop photograph from the Montpelier Farmers Market:

Example of Big E Facebook post highlighting specialty crop producers: