

Specialty Crop Block Grant Agreement No. 12-25-B-1100

Second Annual Report to USDA-Agricultural Marketing Service

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Submitted by



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PROJECT 1: Apple Industry Study – Previously Accepted

PROJECT SUMMARY

Reductions in the New England Agricultural Statistics Service have left apple growers, apple researchers, extension personnel, UVM administrators, lawmakers, crop insurance representatives and other apple industry associates with insufficient or inaccurate data to make informed decisions regarding research activities, marketing strategies and furthering the industry’s educational and other needs. More accurate assessments of acreage, varieties grown, marketing channels, orchard training methods used and pest management strategies were determined to be needed to guide future public and private investments in the industry.

Thanks to SCBGP funding, the Vermont Tree Fruit Growers Association (VTFGA) recently completed a comprehensive survey of Vermont’s apple industry to determine the number of commercial apple orchards currently operating in the state, quantify bearing and non-bearing acreage, determine marketing venues, varieties grown and verify orchard training methods. In keeping with congressional goals for the SCBGP, VTFGA believes that the results of this survey will make Vermont’s apple growers more competitive and sustainable in today’s economy.

PROJECT APPROACH

VTFGA conducted a survey of the state's apple industry to provide a basis for making more informed decisions for future research, marketing and education needs. In January 2011, VTFGA directors and officers began planning development and distribution of the survey. In early May, VTFGA printed 200 survey packages (which included a No. 10 survey envelope, a survey cover letter, a No. 9 self-addressed, stamped return envelope and the four page survey form).

Survey packages were mailed directly to 86 commercial industry members previously identified by VTFGA. Additional survey packages were provided to **Vermont Organic Farmers LLC**, which distributed the survey forms to its apple-producing members. Additional surveys were distributed over the course of the next several months.

Display ads notifying growers of the industry survey were run three times in *Agriview*, the Vermont Agency of Agriculture's publication of record. VTFGA's Executive Director distributed additional survey forms to industry members at meetings and during orchard visits through October 2011.

GOALS AND OUTCOMES ACHIEVED

The original proposed survey was intended to provide four measurable outcomes, outlined below:

1. Determination of acreage and other details of current apple plantings (including predominant rootstocks and management intensity);
2. Identification and quantification of variety production;
3. Determination of commercial cold storage capacity (regular and controlled-atmosphere) including uncommitted/rental capacity; and
4. Approximation of sales through direct-to-consumer (retail) and wholesale channels to direct future activities of the Vermont Tree Fruit Growers Association and the Vermont Apple Marketing Board.

In the process of developing the final survey form, VTFGA officers and directors decided to omit the measurement of cold storage capacity due to the substantial contraction of the state's industry over the past 20 years. Instead of determining cold storage capacity, they felt that it was more important to measure: (a) labor/employment factors, (b) pest management practices, (c) pollination issues and (d) future industry education needs. As a result, the survey collected information in those four areas.

Surveys were collected from May through November 2011. Through November and early December, results were compiled and preliminary results shared with VTFGA officers and directors. The results are currently undergoing editing and will be sent to the printer by the end of December. Survey results are scheduled for distribution to Vermont agricultural officials, legislators, UVM and other state colleges and universities and to key Vermont libraries beginning in January 2012.

The 2011 Vermont Apple Industry Survey was the first such survey conducted by the Vermont Tree Fruit Growers Association (VTFGA). The last known apple industry survey, conducted by the University of Vermont (UVM) in 2001, had similarities but was principally an evaluation of UVM services. The UVM survey does allow VTFGA to make some comparisons:

The VTFGA survey was based on 42 responses from orchards representing 2,726 acres of apples. The UVM survey, based on 44 responses, represented 2000 acres. The current survey indicates a small increase in acreage from 2001. *McIntosh* remains the predominant variety (cultivar), followed by *Empire*, *Cortland*, *Macoun* and the new (1960) University of Minnesota introduction, *Honeycrisp*. Self-supporting, stand-alone semi-dwarf and dwarf trees remain the prevalent (60%) training method used in orchards, but there has been significant movement towards more modern single pole and trellis support systems.

Perhaps the most substantial changes have been in the marketing channels through which Vermont apples have been sold. Over 50 percent of the crop is sold through wholesale/supermarket channels through brokers and agents including J.P. Sullivan & Company (MA) and Hudson River Fruit Distributors (NY) and through Direct-to-Store Deliveries (DSD) to independent grocers and local supermarkets. Twenty-eight orchards selling directly to consumers through farm stands and pick-your-own operations account for nearly 30 percent of the state's crop. Through much of the 1980s and 1990s, nearly 80 percent of the state's apple crop was sold through wholesale channels.

Labor, particularly during the harvest season, continues to be an important issue for both wholesale and direct-market orchards. Those workers in the H-2A program administered by the U.S. Citizenship and Immigration Services account for harvest of nearly 90 percent of the state's crop.

Pest management continues to be an important issue, with over 80 percent of growers reporting moderately-intensive to very-intensive application of integrated pest management (IPM) practices.

Vermont's apple industry has witnessed an extensive loss of technical assistance over the past 20 years, including pest management and horticultural support services at the University of Vermont. Growers recognize their top needs for support are in pest management, marketing and fruit quality improvement.

BENEFICIARIES

In 2007, the U.S. Census reported 264 Vermont farms growing apples. The focus of the VTFGA survey was on commercial apple production, including several growers with less than one acre of apple trees. The current survey identified a minimum of 350 full-time and part-time workers in Vermont's apple industry.

Most of Vermont's apple orchards are family businesses, ranging from sole proprietorships to corporations (including Limited Liability Corporations, or LLCs). Results obtained through the

2011 apple industry survey will be made available to members of Vermont's apple industry, as well as to industry associates including supermarkets, cooperatives, independent grocers and restaurants. Many vegetable growers with farm stands typically carry Vermont apples in the fall.

The survey results clearly indicate that Vermont's apple industry has changed substantially over the past 25 years, with direct marketing becoming more popular. Wholesale markets still account for a major part of apple sales, but the number of orchards selling directly to consumers has increased.

LESSONS LEARNED

An important result of the survey is that VTFGA, the University of Vermont and other support organizations, including the Vermont Agency of Agriculture, will be in better positions to determine future assistance to the industry. When the Vermont Apple Marketing Order was passed by the apple industry in 1985, about 80 percent of production was sold through wholesale channels. Direct-marketing to consumers has increased substantially, but wholesale still accounts for at least 50 percent of the state's apple market (Inordinate rainfall in the spring and again in the fall, along with substantial hail damage in July and early August, substantially reduced apples available for wholesale accounts, such as supermarkets for the 2011-12 marketing season).

The survey encountered no significant problems or delays. VTFGA would have preferred to have begun distributing the survey earlier in the season—February or March instead of May—but the delay was not determined to have a significant effect on the process.

Final collection of completed survey forms in the fall were hindered to some extent because of Tropical Storm Irene, which closed numerous roads and bridges in Vermont, slowing the collection process and causing somewhat delayed compilation of survey results. No further delays are anticipated, and VTFGA is planning on having the survey reports available to interested parties by early January 2012.

VTFGA has already begun using results of the survey in planning its 116th annual meeting scheduled for February 16, 2012 in Middlebury, VT.

CONTACT PERSON

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PROJECT 2: Apple Industry Marketing & Support – Final Report

PROJECT SUMMARY

The purpose of this project was to increase the competitiveness of Vermont's apple growers in local, regional and national markets through diverse, yet focused, efforts. VTFGA's original approach to implementing this project was focused on the following core elements:

1. Enhancing the effectiveness of Vermont's apple website, www.vermontapples.org;
2. Participation in the 2011 New York Produce Show;
3. Conducting a "buy local" apple marketing campaign for the 2011 crop; and
4. Providing support services for Vermont's apple growers.

Just 25 years ago, Vermont's apple industry was relatively homogeneous, with nearly 80 percent of the crop being sold through wholesale channels. At that time, the McIntosh variety represented 70 percent of total production. Today's industry is much more diversified, both in sales channels and varieties grown. VTFGA received \$1,950 from SCBGP in early 2010 to begin developing its website. The website was further developed in 2011 as a result of additional SCBGP funding.

PROJECT APPROACH

VTFGA's website, originally wholly focused on consumers, was revised in 2011 to include a growers' section, with industry news, meeting announcements and links to other sites of interest to commercial apple growers. While not visible to the casual observer, much of the website investment went into a major change in programming which will allow revisions and updates to be more streamlined in the future.

VTFGA had planned to participate in the 2011 New York Produce Show in New York City in November 2011. During the 2011 growing season, hail damaged much of Vermont's apple crop, resulting in 89 percent of the state's total apple holdings designated for processing rather than for fresh markets. (Typically, more than 80 percent of the crop is destined for higher-valued fresh markets. With such a high proportion of the crop fated for processing, it made no sense to pursue supermarket sales at the New York show for the 2011-12 marketing season. Funds originally intended for the New York show were shifted to cover attendance at the January USApple Public Affairs Committee meeting in Washington, D.C.

The 2011 Vermont apple marketing campaign included several components, including:

- A coordinated marketing theme: Great Vermont Apples: Pick-your-own orchards and farm stands are important seasonal marketing venues for Vermont's apple growers. In an effort to encourage direct-marketing with a fairly limited budget, the Vermont Tree Fruit Growers Association (VTFGA) chose a very family-friendly marketing campaign. A local graphic artist recommended the Great Vermont Apples theme. VTFGA selected family-friendly venues for advertising: KidsVT (a statewide newspaper), VPR (Vermont Public Radio, a statewide radio network), "partnering" with the Vermont Department of Tourism & Marketing to provide rack

cards, posters and apple samples to Vermont Welcome Centers and certain rest areas and participating in a Vermont Public Television cooking program. The “Better than a Glazed Donut” was part of an effort to impede the growing rate of obesity in this country.

- A full page ad in KidsVT, a monthly newsprint publication: Twenty-five thousand (25,000) copies of KidsVT are distributed to over 800 family-friendly sites in Vermont 10 times a year. Circulation Verification Council, an independent publication audit and marketing services company monitors distribution. According to CVC, 94% of KidsVT papers are picked up by parents each month. With strong pass-along appeal, KidsVT readership is determined to be over 52,000 per month. Audit reports are available by calling 802-985-5482. Children are major influences on parents’ decisions to “go apple picking”, an important factor in why VTFGA chose to place its only newsprint ad in KidsVT. School teachers are also important influences on whether or not school groups will take field trips to apple orchards. Research has shown that advertising has a big impact on children’s eating habits (one study is reviewed at <http://www.cbc.ca/news/health/story/2011/10/06/food-ads-childrenparents.html>).
- Advertising (“underwriting”) campaign on Vermont Public Radio: VPR and VPR Classical have more than 180,000 listeners a week from Vermont and the surrounding region. VPR members have a higher than average household income and public radio listeners are 88% more likely to purchase products from companies that support public radio. Vermont apples are believed to gain credibility and favor by being associated with VPR’s reputation for quality and public service. Three rotating messages, each promoting Vermont apples, were run on morning and afternoon drive times and on a rotating schedule (weekend afternoon, weekend evening, weekend morning, midmorning, midday and evening) on VPR. The messages were run on a rotating schedule on VPR Classical. The campaign ran from September 5 through October 2, 2011. A total of 12 messages were run, statewide, at a per ad cost of \$123.33 each.
- Partnership with Vermont Foodbank for Pick for Your Neighbor (3rd consecutive year): The Pick for Your Neighbor campaign was part of the Conduct a “buy local” apple marketing campaign for the 2011 crop described in Agreement #0220-SCBGP37 with the Vermont Agency of Agriculture. In the agreement was the statement that the campaign would be modeled after previous activities. The Pick for Your Neighbor activity was conducted in support of the Vermont Foodbank and was open to all Vermont orchards, whether they were members of VTFGA or not. According to Ms. Michelle Wallace, the program director at the Vermont Foodbank, in 2011 the program delivered 8,380 pounds of fresh apples to needy Vermont families. In 2012, that number went up to 12,189 pounds. VTFGA recognized orchards that participated in the program in a brochure listing Vermont Apple Orchards and in the KidsVT ad. More on the Pick for Your Neighbor program can be found at: <http://www.vtfoodbank.org/OurPrograms/AgPrograms/PickForYourNeighbor.aspx>. The only SCBGP funds spent on Pick for Your Neighbor were as part of the rotating message on Vermont Public Radio ads.
- Marketing support for “Apples to iPods” campaign with the Vermont Dept. of Tourism: As part of an effort to attract more young people to Vermont’s apple orchards in the fall, VTFGA first

teamed up with the Vermont Department of Tourism & Marketing in 2007 for the first Apples to iPods promotion. Each participating orchard was provided (by VDTM) with a wooden apple. The apples were hung in the orchards, and when a non-employee apple picker found them, they could be redeemed for an iPod or iPod accessory provided by Small Dog Electronics, a Vermont-based Apple™ computer/electronics dealership. The Apples to iPods promotion has been very successful and popular, both with teenagers and with the apple growers. VTFGA promoted the program by mentions on VPR (radio) ads and in the KidsVT ad. VTFGA did not purchase any of the wooden voucher apples or any of the electronic gadgets/prizes. More on Apples to iPods can be found at:

<http://www.prweb.com/releases/Vermont/ApplestoIPods/prweb9854863.htm>

- Participation/planning for VPT Cooks: Apples & Honey show: Vermont Public Television, Vermont's statewide public television network, has seven broadcast channels to serve the entire state, as well as parts of New York, New Hampshire and Quebec. VPT Cooks is a popular cooking show that periodically runs as part of a station fundraising effort. VTFGA's Executive Director met with VPT staff to plan the fall show of VPT Cooks entitled, "VPT Cooks: Apples & Honey" to ensure that apples were well represented on the show. The show featured apples (and honey) recipes, guest chefs, apple growers and beekeepers. Excerpts from the show can be viewed at: <http://www.youtube.com/playlist?list=PLF7DF059147FE04B3>. The shows generally repeat 3 or 4 times in the season, so they're a good promotional vehicle for apples. VTFGA provided 25 coupons (below) that could be redeemed for apples at local orchards.
- Apple sampling at Visitor Information Centers/Vermont Welcome Centers: VTFGA provided certificates for the Visitor Information Centers/Welcome Centers to redeem at their closest apple orchard or through Black River Produce, a statewide produce distributor covering the entire state. Through the redemptions, the Centers procured 50 bushel boxes (2,000 pounds) of apples (VTFGA recommended 140-count McIntosh and Empire apples, since they are very widely available and very reasonably priced). Depending on how busy they were, some of the Centers sliced the apples; others distributed whole apples, for an estimated total of between 10,000 to 12,000 samples provided to visitors.

Support services provided through SCBGP included the production and distribution of twelve monthly newsletters, representation at two important USApple meetings in Washington, DC (the Public Affairs Committee meeting in January and the Annual Board and Committee meetings in March) and at the 2011 Apple Outlook Conference in Chicago. A substantial amount of time and effort was spent shoring up Vermont's participation in Cornell University's Network for Environment & Weather Awareness, or NEWA, a pest management program for which SCBGP provided funding for five new weather stations in 2010.

At the USApple meeting on March 27, 2011, Committee members discussed numerous issues (trade policy, immigration/agricultural labor, pesticide issues, crop insurance, China policy, etc.) among themselves and USApple staff. Each of these issues is important to Vermont apple growers. VTFGA regularly uses its monthly newsletter to these and other issues. VTFGA has been open about its

involvement with the U.S. Apple Association. The U.S. Apple Association's mission is to provide to all segments of the U.S. apple industry the means to profitably produce and market apples and apple products. The organization represents the apple industry on national issues, increasing the demand for apples and apple products, and providing information on matters pertaining to the apple industry.

VTFGA's role in USApple is that of a small state member trying to "piggyback" on the organization's efforts with education, public relations. These funds were not spent on lobbying. Fortunately, VTFGA does not have to go to Washington, DC to discuss issues with its elected representatives. It can do that easily through their offices in Vermont, without SCBGP support.

GOALS AND OUTCOMES ACHIEVED

Three of the four "core elements" originally proposed were completed. As previously noted, participation in the New York Produce Show was canceled due to extensive hail damage across the state. Achievements included:

- Enhancing the effectiveness of Vermont's apple website, www.vermontapples.org. Although launching of the revised website was later than originally planned, Google Analytics provided a good "snapshot" of visits to the site (report shown below). SCBGP funds were not made available until December 2010, so by default, 2011 became the baseline for website visits. In the future, VTFGA will have a base with which to compare future effectiveness and "visits". The Google Analytics report for 9/1/2011 to 3/13/2012 can be found in the "Additional Information" section.
- Conducting a "buy local" apple marketing campaign for the 2011 crop. Growers were surveyed at the end of the harvest season to determine the effectiveness of the fall marketing campaign. The campaign was given an overall enthusiastic approval, with a challenge for a 2012 encore. Continued participation in the Apples to iPods with the Vermont Department of Tourism, the Vermont Agency of Agriculture, Small Dog Electronics and Vermont Hard Cider Company, apple sampling at Visitor Information Centers and the VPT Cooks events were among the highest rated fall marketing activities. Because of weather-related factors during the growing season, VTFGA was unable to provide any meaningful estimate of sales related to the promotion. The weather issues included: 1) heavy spring rains which resulted in flooded orchards, particularly in Grand Isle County and Franklin County; that flooding made early pest management difficult, resulting in poor quality, unmarketable fruit in several orchards, 2) Tropical Storm Irene in late August, which destroyed numerous bridges and miles of state roads, and 3) late hail storms, particularly in Addison County, severely damaging fruit at several wholesale orchards. In all, Vermont lost 89% of its 2011 crop. The widespread damage from Tropical Storm Irene was compared to the widespread flooding damage occurring in 1927.
- Providing support services for Vermont's apple growers. Twelve newsletters were distributed to growers. Members received at least four additional e-mail updates on USApple activities, including Market News, Apple News and reports on the Apple Outlook Conference and USApple Committee activities.

Overall, VTFGA fully completed seventy-five percent of its goals. The exception, participation in the 2011 New York Produce Show, was not completed due to extensive hail damage to the state's major wholesale orchards. VTFGA was able to establish important baselines in the effectiveness of its website in attracting consumers to orchards. Due to the sometimes extreme fluctuations in production from year-to-year, USDA, USApple and other organizations often use five-year averages for crop reports. The 2011 production season was overall an extremely bad year for Vermont producers, with a disproportionate amount of holding going into processing rather than more profitable fresh markets.

VTFGA's monthly newsletters are available at <http://www.vermontapples.org/vtfga.php>. USApple activities affecting Vermont are frequently reported in the newsletter. If USDA or VAAFM wants older issues, they can contact steve.justis@gmail.com for copies. If USDA would like to be included on VTFGA's newsletter mailing list, we would be pleased to include you. The Executive Director was able to visit with growers throughout the state during September and October 2011 to discuss issues including marketing, storm damage, the state's linkage with Cornell's Network for Environment & Weather Awareness (an Integrated Pest Management computer-weather station link supported by a previous SCBPG) and prospects for the 2012 apple crop.

BENEFICIARIES

Activities under this project were most beneficial to the 33 growers selling directly to consumers through their farm stands and pick-your-own operations. Many of the direct-to-consumer operations, which are scattered across the state, avoided the extensive hail damage in late August. The 2007 census reported 264 farms growing apples on 3,241 acres of land in Vermont. Based on a 2011 industry survey, VTFGA believes that the U.S. Census number is not a true representation of the number of commercial orchards in Vermont and that the number of commercial producers is closer to 65 (the 3,241 acres in apple orchards, is, however, accurate). A number of growers manage orchards that were previously independently-operated but now managed under one business name.

Each of the orchards stood to benefit from this through VTFGA's involvement and interaction with local and regional consumers and with the U.S. Apple Association. On the national and international levels, USApple continues to address issues of importance to Vermont growers, including guestworker programs like H-2A (which is responsible for harvesting nearly 90 percent of the state's apple crop), pest management (including Cornell's NEWA program), research on apple rootstocks and potentially devastating pests such as the Brown Marmorated Stink Bug, public relations and Chinese fresh apple imports. Each of these issues has important economic implications, driven by market demand. Demand is of course driven by fruit quality, availability and perceived value. In general, over the past ten years, Vermont's total utilized production prices for apples have ranged from 22.5 to 37.3 cents per pound, over 150 percent higher than national averages of 12.8 to 22.8 cents per pound.

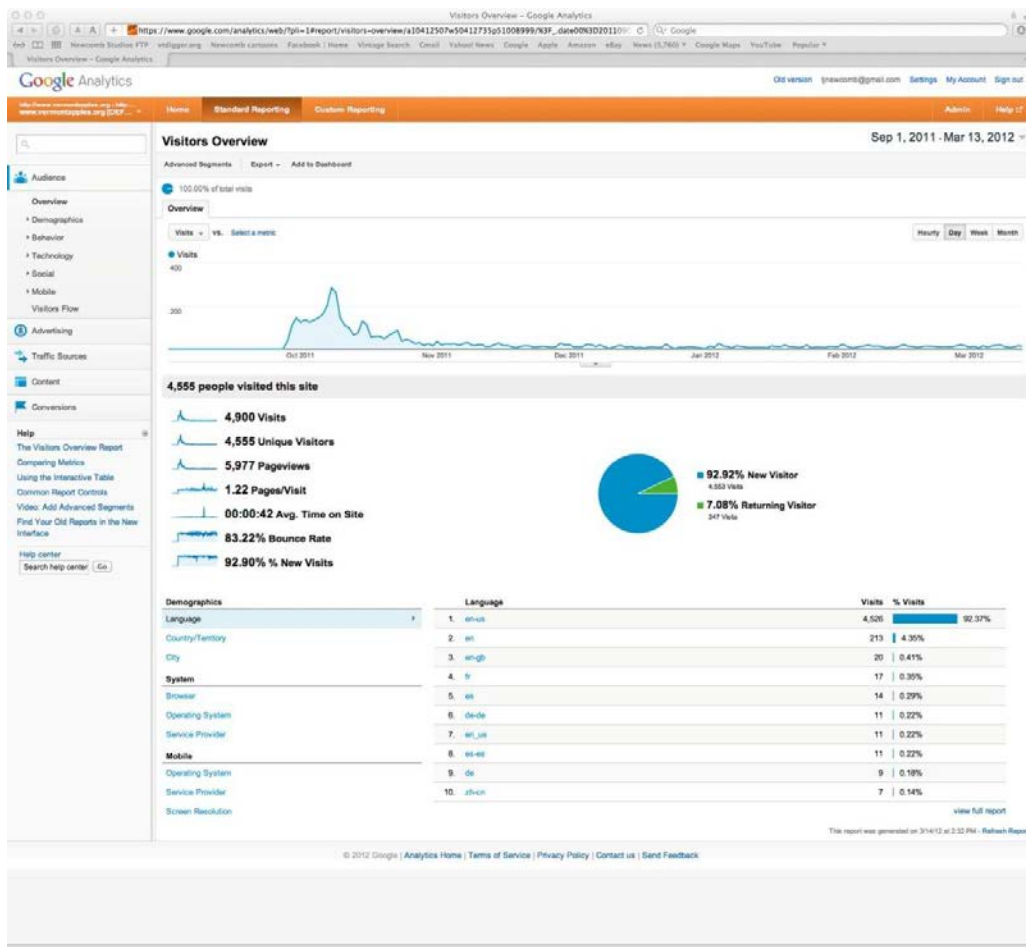
LESSONS LEARNED

VTFGA members are generally very pleased with the results of this latest round of SCBGP-funded activities. While a relatively small industry organization, VTFGA is still quite diverse, necessitating a diverse approach to actions. The organization's website, while continuously requiring updates, is now at a point that it can be changed as needed. VTFGA's fall marketing program, while multi-faceted in 2011, provided a repeatable format, even if occasionally fewer marketing dollars are available in the future. The core of VTFGA's communications, the monthly newsletter, provides necessary attention to the organization's membership. There is still significant demand for wholesale marketing assistance. Despite the decline in the importance in wholesale accounts over the last 15 years, sales to retailers (supermarkets, cooperatives, independent grocers, etc.) still account for over half of the state's annual production.

CONTACT INFORMATION

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ADDITIONAL INFORMATION

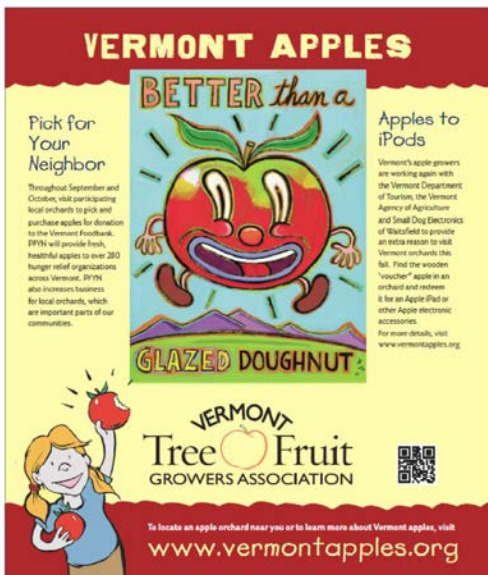




Front cover of VTFGA monthly newsletter



Great Vermont Apples and rack cards at Fair Haven Welcome Center 10/17/2011



Back cover of KidsVT newspaper, September 2011

PROJECT 3: In-Store Apple Display Units Pilot – Final Report

PROJECT SUMMARY

With 95 percent of U.S. food sales being made through supermarkets, it is critical for Vermont apple growers to maintain access to those important sales venues. At least eight Vermont orchards provide DSD (direct store delivery) to local supermarkets and cooperatives. The original intent for project was to develop apple display units for retailers to use in a pilot to sell local apples in

Vermont stores. Upon completion of a survey of Vermont retailers, VTFGA realized that store “clean store” policies generally precluded most suppliers from providing display units to stores.

Subsequently, VTFGA changed the focus of the project to in-store apple sampling, an effective means of promoting immediate sales to consumers already in the store, as well as encouraging repeat sales (<http://www.adweek.com/news/advertising-branding/store-sampling-boosts-repeat-purchases-106208>). Studies have shown that in-store sampling can be effective in changing consumers’ perspectives on product purchases (e.g. choosing a *McIntosh* over a *Gala* apple). In-store sampling has also been shown to have a carry-over effect several weeks beyond an initial sampling.

This was a new proposal, not previously supported with SCBGP funds.

PROJECT APPROACH

VTFGA developed an initial survey (Attachment 1), which DSD vendors distributed to retailers. . The results of the survey indicated that “clean store” policies (i.e. no “outside” advertising) and liability concerns dissuaded most retailers from using third-party owned display units. In August 2011, VTFGA submitted a change of scope request to the Vermont Agency of Agriculture to allow the organization to oversee in-store samplings of apples to stimulate sales through various retailers. Revised goals were:

- VTFGA will focus efforts on in-store promotions of Vermont apples, anticipating a minimum of 35 sampling/tasting activities with at least five retailers (supermarkets); and
- Sales volumes and consumer acceptance of apple varieties sampled will be tracked.

In late August of 2011, two weather-related events reduced the number of DSD growers able to participate in the in-store sampling. Extensive hail caused damage in the western counties and Tropical Storm Irene caused considerable losses in the southern counties. Scott Farm of Dummerston, Champlain Orchards of Shoreham and Allenholm Farm of South Hero were the only orchards able to participate in the sampling.

GOALS AND OUTCOMES ACHIEVED

VTFGA developed an initial survey, which DSD vendors distributed to retailers. The results of the survey indicated that “clean store” policies (i.e. no “outside” advertising) and liability concerns dissuaded most retailers from using third-party owned display units. In August 2011, VTFGA submitted a change of scope request to the Vermont Agency of Agriculture to allow the organization to organize in-store samplings of apples to stimulate sales through various retailers. Revised goals were:

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- Sales volumes and consumer acceptance of apple varieties sampled will be tracked.

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Goal 1: VTFGA will focus efforts on in-store promotions of Vermont apples, anticipating a minimum of 35 sampling/tasting activities with at least five retail grocers.

Results 1: Three DSD vendors participated in 14 samplings/tastings, with 10 retailers. Vendors were Allenholm Farm, Champlain Orchards and Scott Farm. Retail grocers included: City Market (Burlington), Hannaford's (Essex), Healthy Living (Burlington), Hunger Mountain Co-op (Montpelier), Lantman's Market (Hinesburg), Middlebury Co-op (Middlebury), Rutland Co-op (Rutland) Singleton's (Proctorsville), Village Market (Waterbury) and White River Co-op (White River Jct.).

Goal 2: Sales volumes and consumer acceptance of apple varieties sampled will be tracked.

Results 2: Retail sales venues were smaller (more independent retailers than supermarkets) than anticipated, so sales averaged 3-7 bushels per sampling. At a typical per bushel price of \$29, sales during sampling averaged \$145, and totaled \$2,030. Consumer acceptance of the apples sampled was overall very high. Vendors were unable to fill repeat orders for apples because of the reduced inventories available after January.

Outcomes achieved were less than anticipated or desired, but were substantially due to the reduced number of US No. 1, Fancy and Extra Fancy grades available by the end of January 2012.

Sampling details were tracked by vendors using the form shown in Attachment 2.

BENEFICIARIES

In a more typical marketing year, the number of DSD apple vendors in Vermont would be eight or more (typically Allenholm Farm, Champlain Orchards, Dwight Miller Orchards, Green Mountain Orchards, Mendon Mountain Orchard, Saxton's River Orchard, Scott Farm and Sunrise Orchards). Due to the short crop, many of the larger supermarket chains bought their fruit from other states for much of the season.

LESSONS LEARNED

This project was initiated at the encouragement of one of the DSD vendors, who had actually built two retail sales units for use by his customers (see photo, below). When the retailer surveys were circulated among grocers, DSD vendors learned that the local produce manager seldom made policy decisions for his or her store; those decisions generally came from higher level corporate managers. Because of the intense competition for retail space in supermarkets, many chains have maintained "clean store" policies for years to avoid "clutter, as well as to keep private brands from competing

directly with their own store brands. VTFGA did not have enough time between the time of the SCBGP proposal announcements and submission deadlines to conduct its own survey of retailers.

Upon completion of the retailer survey, VTFGA requested that the SCBGP funds be applied to in-store sampling, an activity with which VTFGA had ample experience. The request for a change of scope, unfortunately, coincided with widespread hailstorms and the effects of Tropical Storm Irene. By late September, it became clear that Vermont's fresh crop apples (U.S. No. 1, Fancy and Extra Fancy grades) would be in extremely short supply. Due to the short crop, most of the supermarkets contracted with out-of-state suppliers who could provide apples through spring 2012.

CONTACT INFORMATION

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ADDITIONAL INFORMATION

Attachment 1:



Vermont In-store Apple Display Unit(s) Retailer Survey

Dear Vermont Retailer,

The Vermont Tree Fruit Growers Association would like to help you optimize consumers' desire to buy more locally-grown apples. We'd appreciate your recommendations and comments on the design of an in-store retail apple display unit. We don't even need your name or your company's name. Please simply return the form to your apple supplier/distributor and he or she will return your recommendations for compiling.

1. Should display units be: Refrigerated? _____ Non-refrigerated? _____ *(Please √ preference)*

2. Should units be capable of displaying *(please √ all that apply)*:

Bushel boxes _____? Field boxes _____? Bulk/loose apples _____? Totes _____? Bags _____?

3. What amount of floor space would be optimum for the unit? *(Please place a √ under appropriate area)*

2-3 sq. ft.	3 ½-6 sq. ft.	6 ½- 9 sq. ft.	10-14 sq. ft.	15+ sq. ft.

4. What materials would you prefer for the unit? *(Please place a √ under preferred material)*

Natural wood	Painted wood	Plastic	Metal	Other

--	--	--	--	--

5. *Might* you be interested in hosting or siting the Vermont apple unit in your store? (Please *v* preference)

Yes	No

6. Which months would you be *most likely* to use the Vermont apple display unit in your store? (*Place v's as appropriate*)


Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov	Dec

7. To show your commitment to “buying locally”, should the display unit feature the name of the Vermont orchard? (*place v by preference*).

Yes	No

Please place any additional comments or suggestions on the back of this page or attach an additional sheet.

Attachment 2



Report Form and Invoice for In-store Sampling Activities 2011-12¹

Orchard Name: _____

Mailing address (for reimbursement): _____

Apple Retailer: _____ Town: _____

Date(s) of Apple sampling: _____

Reimbursable expenses:

Item #	Item	Rate		Line total
1.	_____ hours	@ rate of _____	=	
2.	_____ miles	@ rate of __51¢__	=	
3.	Supplies ²	cost	=	
4.		Total to be reimbursed to Vermont orchard	=	

Supplier comments on sampling activity (consumer reception, retailer reception, effect on apple sales, etc.): _____

¹Supported by USDA Specialty Crop Block Grant Program funds through SCBGP#38 in cooperation with the Vermont Agency of Agriculture, Food and Markets
²Supplies include paper plates, hand sanitizers, paper towels, toothpicks, etc.

Please return form **no later than March 16, 2012** to: Steve/VTFGA, 1765 Center Rd., Montpelier, VT 05602-8544

PROJECT 4: Preventative pest control for Vermont fruit and vegetable systems – Final Report**PROJECT SUMMARY**

In the Northeastern US, natural enemies of insect pests are often not abundant enough early in the season to prevent insect pest populations from causing cosmetic damage to vegetables and fruits. Consumers concerned about environmental and health risks are increasingly demanding produce grown without chemical pesticides. However, there are limited options for preventing pest outbreaks. The purpose of this study is to evaluate compost as a tool for conservation biological control, helping growers to develop preventative pest control systems for vegetable and berry production in Vermont. In 2012, we continued our collaboration with Dr. Deborah Neher and Thomas Weicht to examine how compost quality influenced arthropod predator assemblages within crucifer fields. The field trial was conducted in broccoli fields in Hardwick, and at the Intervale, in Burlington Vermont. We compared three composts that varied in recipe with a bare ground control to evaluate how compost quality influenced arthropod predator assemblages within crucifer fields.

PROJECT APPROACH

We amended the study in order to be able to evaluate composts, which would be more amenable to GAP certification. The purpose of this study is to evaluate compost as a tool for conservation biological control, helping growers to develop preventative pest control systems for vegetable and berry production in Vermont. In 2012, we continued our collaboration with Dr. Deborah Neher and Thomas Weicht to examine how compost quality influenced arthropod predator assemblages within crucifer fields. The field trial was conducted in broccoli fields in Hardwick, and at the Intervale, in Burlington Vermont. We compared three composts that varied in recipe with a bare ground control to evaluate how compost quality influenced arthropod predator assemblages within crucifer fields.

Highfield Institute, Hardwick, VT and Intervale Community Farm

Dr. Deborah Neher, chair of Plant and Soil Sciences, University of Vermont – we worked collaboratively with Dr. Neher's lab. They created the composts over the previous year, and evaluated how effective the compost production process is effective in killing pathogens and weeds. We collaborated with Dr. Neher's lab to examine the role of compost in influence predator abundance, detritivore abundance, and disease spread.

Compost Recipe Development

Three distinct composts were created using dairy manure and spoiled silage as the parent material. Two of the composts were created by blending the parent materials with different sources of Carbon feedstocks and the third compost was the control, which was straight manure and silage as it came from the farm. The blended compost mixes were created based upon an analytically developed recipe to achieve a C:N Ratio and moisture content in a range to achieve proper thermophilic composting.

Mix	Manure/Silage (cubic yards)	Hay (cubic yards)	Hardwood Bark (cubic yards)	Wood Shavings (cubic yards)	C:N Ratio of Initial Mix*
Hay Mix	15	45 (4.5 round bales)			23.2 : 1
Hardwood Mix	15		15	9	34.2 : 1
Control	30				17 : 1

* C:N ratios are calculated and are based on analysis of the same types of materials that was done in 2011. We tried to use materials from the same sources and with similar characteristics in 2012. The hardwood bark was primarily yellow birch.

Compost Pile Blending

Each of the mixes we're blended using a slightly different method, due to the nature of the materials.

Mix	Blending Method
Hay Mix	(02/09/12) Manure/Silage and hay were layered in the compost pile with a tractor bucket and then composted statically without initial mixing by turning. The mix was blended with the tractor as the pile was rotated between aerated static pile bays.
Hardwood Mix	(02/01/12) Manure/Silage, wood shavings, and hardwood bark were layered in a concrete blending area and then thoroughly mixed by turning it with the tractor bucket. The mix was then stacked in the aerated static pile bay and blended further as it was rotated between bays.
Control	(02/03/12) Manure/Silage were stacked in the aerated static pile bay with the tractor bucket without any mixing.

Compost Pile Management

A method known as Aerated Static Pile (ASP) Composting or "forced aeration" was utilized to manage compost pile aerobicity and to attempt to speed up the composting process to the short processing timeline required to have compost for field trials by May. In the process, air is pushed by a high powered blower through a system of air channels beneath the composting bay and through the compost piles. All three composts were managed by this method during their initial thermophilic period. Management of the composting process in this manner consisted of the following 1) Monitoring of pile temperature, pile

moisture, and visual/olfactory observation 2) Controlling the flow of air into the compost piles 3) Rotating and wetting the piles as needed.

Study approach

Our goal was to have 15 finished yards for each of the three compost treatments.

The treatments were 3 types of compost and 1 control. Because we had extra compost and land, we tried two other treatments at one site (Riverside, VT)

1. ASP Hardwood
2. ASP Manure
3. ASP Hay
4. Bare
5. Only at Riverside – Reg. windrow
6. Only at Riverside – 80% reg windrow, 20% vermicompost

Each plot was 3-bed wide (18' wide) by 25' long experimental units with cruciferous crop

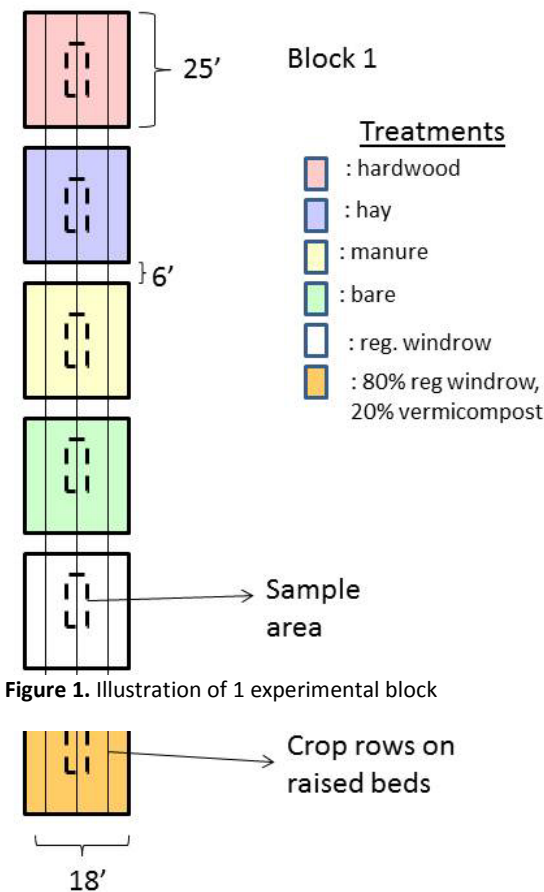


Figure 1. Illustration of 1 experimental block

in the center bed. We sampled the center 8 plants of the center bed to allow for a border region around the sampling area to avoid interplot interference.

A randomized complete block design with 5 replications at each of 2 sites (Intervale, Riverside) was implemented (Fig.). A bare space of 6' will be left between experimental units for walking and separation. Compost treatments will be applied after the first cultivation and we will follow farmer practices thereafter. We will spread compost manually using shovels and racks to avoid transplant damage. The application rate of 20 tons per acre (twice the typical application rate) = 40 yd³/acre = 0.4 yd³/plot (2 ½ wheelbarrows). We started collecting arthropods 2 weeks after compost spread, using pitfall traps. This sampling regime was every 2 weeks until harvest. We collected leaf damage samples in July. One pitfall trap will be placed in the center of each plot to avoid edge effects. We analyzed the data using generalized linear models for all predators and the most widely

abundant predators in SAS (SAS Institute, Cary, NC).

In 2011, we found that at the Riverside Farm, only the hardwood treatment was significantly different from all of the other treatments, and had the highest abundance of

ground beetles. The other four treatments were not statistically different from one another.

GOALS AND OUTCOMES ACHIEVED

Our goal was to evaluate the efficacy of composts to increase natural enemies in vegetable agroecosystems. We did not observe a direct increase in natural enemies that could be directly attributed to the composts. Due to the lack of clear recommendations that could be seen from our data, we did not disseminate the results widely to farmers. We reasoned that any ambiguity in our results would only confuse farmers.

Due to our lack of significant results demonstrating any clear benefits of manure use for biological control, we were unable to conduct the outreach activities with UVM Extension, NOFA-VT, and Vermont Vegetable and Berry Growers Association, as planned. We were also unable to meet the performance measures documenting the change in perception in practices around manure use, because of the shift in our approach to compost. Compost is widely accepted under organic standards for pre-treatment or as a fertilizer amendment. We did not think that a similar survey designed to ask growers about the perceptions around compost use would be as informative, because it widely used as a soil amendment already.

In 2011, we found that at the Riverside Farm, only the hardwood treatment was significantly different from all of the other treatments, and had the highest abundance of ground beetles (Figure 1). The other four treatments were not statistically different from one another.

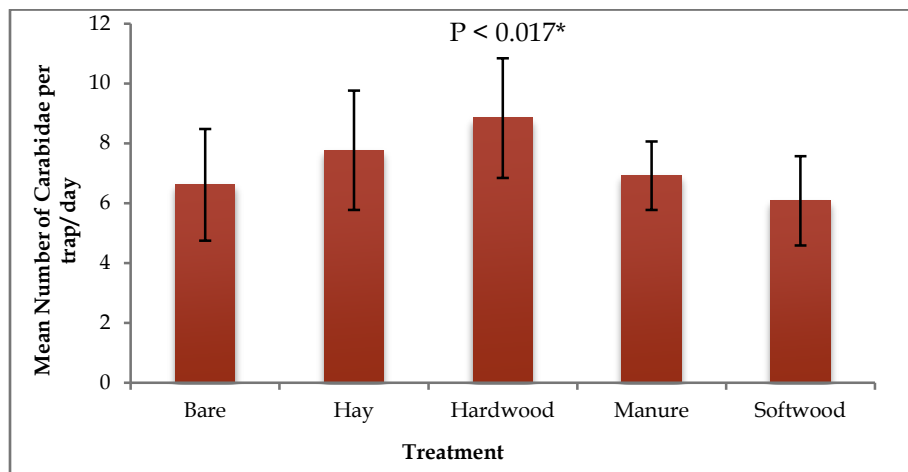


Figure 1. Mean number of Carabidae per trap/day at Riverside Farm. P value indicates significance.

At the Intervale Community Farm both the Manure and Hardwood treatments were significantly different from the other four treatments (Figure 2). The manure treatment had the highest abundance of carabids, while the hardwood treatment had the lowest

abundance. The bare, hay, and softwood treatments were not significantly different from one another.

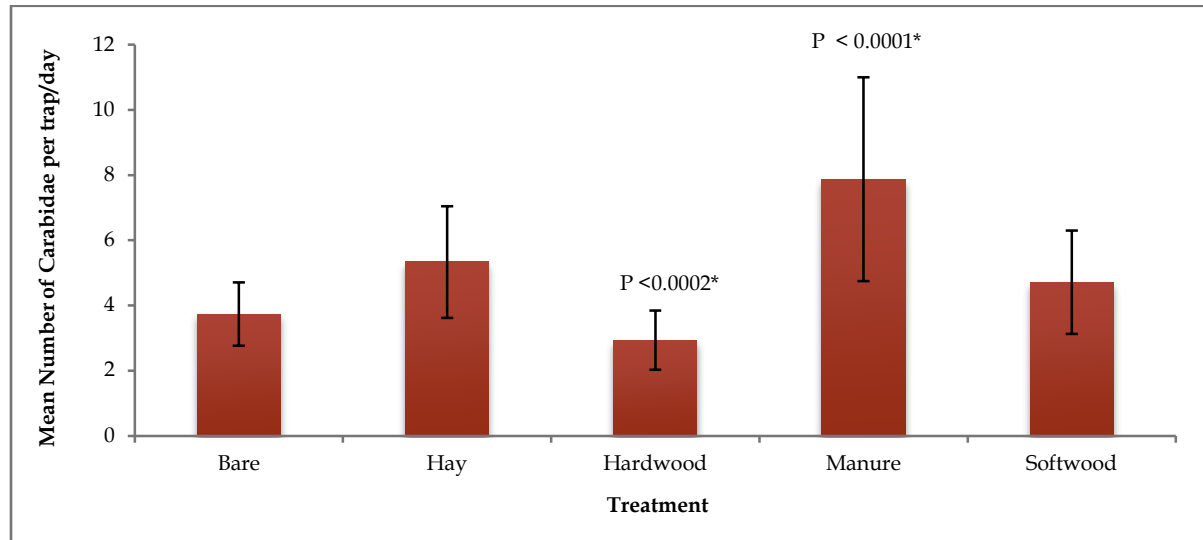


Figure 2. Mean number of Carabidae per trap/day by treatment at Intervale Community Farm. *P* values indicate significance.

In 2012, we applied three compost treatments Aerated Static Pile (ASP) Hard, ASP Manure, ASP Hay, and compared these treatments with the Bare ground control. We found that the compost applications did not influence the amount of herbivory.

We also examined if the treatments influenced predator densities. We found that the treatments did not significantly influence predator densities.

BENEFICIARIES

This project helped to train undergraduate students. The potential impact from this project is that farmers' may not need to spend as much money on pest control if compost amendments may supply both fertility and pest control needs.

LESSONS LEARNED

Our results demonstrate that variation in compost quality can influence predator abundance. However, we are unsure why the composts may vary so much between the different locations. The 2012 data suggests that variation among treatments in compost quality is not sufficient to reliably influence predator densities. While ground-dwelling predators feed on prey sustained by the soil food web, many species also have large extensive home ranges. Our inability to detect strong differences was likely hampered by the small plot sizes. At this point, the size of the plots that would be needed to really detect the effect of compost would be so large that they would be expensive to finance.

CONTACT INFORMATION

Dr. Yolanda Chen; (802) 656-2627; Yolanda.Chen@uvm.edu

PROJECT 5: Mt Snow Blueberry & Grape Education Program – Previously Accepted

PROJECT SUMMARY

The purpose of this project was to educate local school children and the public through a variety of workshops and events which promote local and state specialty crop producers, including but not limited to blueberries and grapes. Get locally grown produce consistently into schools and restaurants. This was perfect timing as the farm had been the recipient of one of the NRCS Hoophouse grants. Increase attendance for the Deerfield Valley Blueberry Festival and The Vermont Life Wine & Harvest Festival through increased marketing.

The Boyd Family Farm in Wilmington hosted workshops featuring the following subject matters: Pollination, Seed Starting Workshops, Harvesting, Pruning, Hoophouse Production and development of School Gardens. They promoted the “Know your Farmer, Know your Food” program and the “Buy Local” campaign. Over 560 students from three schools and one daycare in the WSSU district and one School and two daycares from the SWSU district as well as the general public on weekends, home schooled students and two day camp programs. We exceeded our goal of 509 students and felt valuable information was shared.

The Deerfield Valley Blueberry festival is an annual, mid-summer, ten-day event. We had 75 different hosts offering activities, through six towns. Highlighted activities included PYO Blueberries, a Blueberry Parade & Craft Fair, block party, pie eating contest and bake sales. Grassroots development has involved many non-profit groups, and encouraged the development of blueberry enhanced products by restaurants within the Deerfield Valley. As a festival we are incredibly creative and inclusive while promoting the local agriculture climate. The “Buy Local” campaign is embraced and promoted during the entire festival. Each year we print Blueberry Festival Passports that were handed out throughout the 10-day festival as a literary of events. Since our first Blueberry Festival Parade the attendance has increased annually this past year we surpassed our target numbers. Several new events were introduced last year and welcomed by participants. To make agricultural references common place among the visitors and residents of our valley we are branding our area of Southern Vermont to be synonymous with good food, grown locally. Blueberries are a specialty crop that perform well in our cold valley and are embraced by consumers near and far. Attendance was up at the majority of the repeat events and the new events last summer were not only well received they are proving to be an incentive for new groups looking to host activities this summer.

The Vermont Life Wine & Harvest Festival occurs annually the last weekend in September. This festival was created in partnership with Vermont Life Magazine and The Vermont Grape & Wine Council to promote Vermont wines, Vermont specialty foods and Vermont products. Highlighted events include tented vendor pavilion with over 50 Vermont producers, chef demonstrations, and wine pairing dinners utilizing Vermont products paired with Vermont wines. In 2009 there were 1700 paid admissions to the Vermont Life Wine & Harvest Festival. In 2010, the attendance grew to

2500. The level of excitement from vendors and inquiries generated from our on-line ads, website, and print ads were very encouraging that our 2011 Wine & Harvest Festival was going to break all attendance records. Unfortunately with Tropical Storm Irene taking a toll on our state's road, we were forced to cancel the 2011 festival. Plans are in the works for the 2012 Vermont Life Wine & Harvest Festival to be held September 21st to 23rd and we plan to come back with a grand event.

PROJECT APPROACH

The Boyd Farm through educational workshops at the farm made great strides in 2011. Embraced by chefs, students and educators alike the new hoopouses not only provide for outdoor educational opportunities they also are making local produce available year round. Working in conjunction with the local supervisory unions and in school food service individuals has been beneficial to all. The local school cafeterias are now taking advantage of the nutritious produce and are working it into their menus. We encouraged and attended meetings and designed a logo for a new competition called Veg Heads. It was to be a state wide cook off at Mount Snow originally scheduled for this past November, but due to Tropical Storm Irene, has been postponed until November 2012. There is a contract in place to supply baby spinach for the competition. The farm-to-plate logo is being widely seen on many restaurant menus throughout the Deerfield Valley. The enhanced school gardens are also doing great and are a part of the curriculum for day classes and after school programs. The gardens are being tended to by school children, teachers and community members. Crops are being utilized in school lunches, after school snack options, and the Jr. Iron Chef competitors.

The wide range of activities the Blueberry Festival in 2011 far exceeded the previous year's expectations. The Mount Snow Valley Chamber of Commerce and Boyd Family Farm teamed up to host and create this festival in 2008. Growing annually in both events and participation has been key to its success. The additional advertising we had from the grant went a long way to jump starting new events like A Blueberry Craft Show, A Blue Eye Contest and a Blueberry Ball. It gave us the advertising money to increase public relations to secure additional sponsors and corporate donations of products. Our goal is to continue to build a solid base on which this festival can grow annually. This festival is a looked forward to every year by our diverse group of valley residents and vacationers and by the virtue of its name is constantly promoting local agriculture. The up side is it is also building an economic opportunity for a valley that has struggled for years in the summer. The Vermont Life Wine and Harvest Festival had a project approach for 2011 to take it to the next level of success. The number of vendors wanting to join us was up due to our success in 2010 and our aggressive marketing. Bus Tour companies were offered packages.

The Facebook and Website was more popular than ever. Lodging packages and Wine Paring Dinners were being offered. The stage was set for a festival of upscale quality to showcase Vermont Specialty Crops.

The motivation for an area food based branding project like this comes from a group of business owners and the Mount Snow Valley Chamber of Commerce wanting to diversify the local economy

and expand access to what is already being grown local. We worked to raise awareness of agricultural producers, encouraging additional local food production and the use of locally grown products. Ultimately promoting healthy eating we know will create a healthier community.

GOALS AND OBJECTIVES ACHIEVED

The Boyd Family Farm was successful in expanding product use. There are currently five restaurants, three schools, one on farm market and one off site market utilizing the available produce from our fields and crops in the hoop house. The hoop house was successful in producing crops all twelve months of the year but December and January are less productive due to day-light hours. Three crops stood as strong performers for the restaurants and or schools. The demand exceeds availability.

Mesclun Mix, spinach and Swiss chard from the hoop house have proved to be the strongest performers and the products most in demand. The timing for planting these crops is critical and day length slows the growth in December and January impacting our ability to keep up with demand. We also were able to encourage the use of root and storage crops this past month in the schools. They introduced roasted Delicata Squash to the elementary school and used roasted onions and butternut squash at the Jr. Iron Chef fundraiser.

560 participants participated in farm.o.l.o.g.y education programs from four schools, three day care programs, several home schooled programs and two different age levels from a camp program in addition to some adult learners. We will also be hosting the Horticulture Class from The Career Center in Brattleboro for quite a few days this winter/spring 2012. We will be working them through pruning of berry bushes, germination, transplanting and spring planting of a hoop house. We have made our selves available to all of the schools to continue the farm lessons as requested.

Increased attendance at *Deerfield Valley Blueberry Festival Parade and Block Party Street Fair*. 2000 Blueberry Festival Passports were handed out throughout the 10 day festival. Blueberry inspired menu items were available at all eating establishments. In 2009, there were only 400 attendees at the *Block Party Street Fair* and 600 in 2010. Over 800 participants attended the Block Party in 2011 and it rained from 5:00 in the afternoon on. Local restaurants, street venders and diners saw increased numbers and some broke records. We know their numbers were up due to the traffic we drew to the village center. We exceeded our goal of 700 despite the weather! Over 2000 attended the Blueberry Parade by clicker head counts; our target was 1500 we well exceed our target by 500. We saw 600 spectators in 2009 and 1200 in 2010. Our Facebook Friends account grew and inquiries were up with host sites for activities. Lodging was up in the valley and second homeowners enjoyed a festival for the whole family in their own back yard!

The *Vermont Life Wine & Harvest Festival* created much chatter from spring 2011 on. Vender interest was up 50%. Wine Paring reservations were being made. Print Ad's, Facebook presence and posters were attracting attention. Day bus tours were booked and interest in overnight accommodations was up from the following year. In 2009 there were 1700 paid admissions to the *Vermont Life Wine & Harvest Festival*. In 2010 there were 2500 paid admission. Unfortunately,

Tropical Storm Irene caused us to cancel the 4th Annual Vermont Life Wine & Harvest Festival. Plans are in the making for the 2012 festival. The success of last year's marketing campaign has guided us in designing this year's. Vermont is Open for Business and ready to showcase our agricultural products.

BENEFICIARIES

560 participants to part in farm.o.l.o.g.y education programs. The Boyd Family Farm attended the Southern Vermont Farm to School conference hosted by Post Oil Solutions. The farm created a power point presentation empowering other farms to host school workshops. We have made both on farm and in school farm programs available to students of all ages. The farm was the driving force in the recreation of the school garden in one of the local schools. They are now harvesting crops grown this year for use by the school kitchen. The farm worked with a purchasing agent that secures food for three schools, products were supplied by the farm and were flash frozen for the upcoming school year. The farm also did onsite classes at one school and helped plant a nursery with the children to promote in school fruit consumption. The participants in the farm.o.l.o.g.y programs have included mainstream learners from the elementary and middle schools, and the general public. We have been hosting weekly courses with children with autism, helping them be the best they can be, as well as introducing them to other opportunities outside of school. We have also hosted an alternate learning program class from the local high school introducing farm projects that included a much broader scope of topics then originally outlined. To date, we have covered courses in: no till and hay mulch gardens to reduce our carbon footprints, seeding and seed germination, soil health, pole barn construction, direct seeding, greenhouse growing, hoop house production, irrigation, pruning, berry bush production, bee hives and pollination, alternate fuel sources for greenhouse heating, tractor mechanics and lawn mower safety. Over 20 free workshops have been attended since the beginning of 2011 at the farm for adult learners.

The 600,000+ residents, students, businesses of and the visitors to the Deerfield Valley greatly benefited from this project. Giving exposure to Vermont Specialty crops, increased access to locally grown produce, increased the knowledge about cooking, consuming, marketing, processing and selling the locally grown produce.

The Estimated direct economic impact of the Vermont Life Wine & Harvest Festival in 2010 was \$170,000. There was no positive impact in 2011 due to cancellation of the festival due to Tropical Storm Irene. Estimated direct economic impact for the Vermont Deerfield Valley Blueberry Festival was \$170,000 in 2010 and \$180,000 in 2011.

LESSONS LEARNED

Taking valuable lessons from the farms regarding Specialty Crops in Vermont to our school age children, local adults and visiting populations has been rewarding. We found many were totally not aware of the agricultural products available locally. By teaching through hand-on demonstrations, and fun activities we have been able to gain many fans for the valley. By making available value

added specialty crop products to our area schools and restaurants we can educate our population and improve our local economy. The Festivals are both successful and continue to grow with new ideas being presented almost daily. The saying, “If you build it, they will come” is so very true in our case. The Chamber and Boyd Family Farm have taken ideas and made them a reality.

CONTACT

Lorre Hoyt, 802-464-8092, lorre@visitvermont.com

ADDITIONAL INFORMATION

<http://www.vermontblueberry.com>; <http://www.thevermontfestival.com> – currently under reconstruction; <http://www.boydfamilyfarm.com>

PROJECT 6: Viable Hops Production – Final Report

PROJECT SUMMARY

New England is home to many high-quality microbreweries. With the popularity of the local food movement reaching into the beverage market, many local breweries have expressed interest in encompassing local ingredients in their beers. As hops haven’t been commercially grown in this area for over a hundred years, the purpose of this grant was to provide high-quality local research and technical assistance to farmers looking to diversify with hops. It is projected that in the upcoming year, the number of microbreweries across the nation will increase by 25%. The craft beer industry is highly competitive and brewers are always looking for something that will give them an edge over the competition. Brewing beers with *terroir* is one of these ways. In these tough economic times, diversifying in agriculture is a good way to ensure economic stability. Hops sold locally have a high economic return, grossing between \$10,000 and \$20,000 per acre, and providing an excellent new market. However, the vast majority of hops research and outreach has been developed for the arid Pacific Northwest, where 99% of commercial hops are produced. The applicability of this research is limited in the humid Northeastern climate, fostering the need for locally relevant, high-quality research based information and a source through which that information can be distributed as it is developed.

PROJECT APPROACH

The objective of this program is to develop local and relevant research and outreach applicable to hops production in the Northeast. Through this project research on hops production has been initiated and numerous educational materials and programs have been delivered to stakeholders.

Hop Variety Trial

Over the last two years, UVM Extension has strived to be a source for relevant information to interested hop growers in the Northeast. To this affect, an experimental hopyard was established in Alburgh, VT during the spring of 2010. The process of constructing the hopyard, setting up the

irrigation, materials, and costs were documented and posted on the project website and YouTube for stakeholders to view (see Outreach section below). Within the hopyard nineteen hop varieties were planted in a replicated complete block design with 3 replicates. The hopyard was planted in August 2010, 3 months behind schedule, as that was when the vegetative hop cuttings arrived from our collaborators in Washington, as part of an USDA OREI grant. One goal of this project is to determine hop varieties that demonstrate disease and pest resistance in combination with high yields in a maturing organic yard, and also present desirable characteristics to brewers in the Northeastern climate. **The results presented below are from the first year of production.**

MATERIALS AND METHODS

The replicated research plots were located at Borderview Farm in Alburgh, VT on a Benson rocky silt loam. The hopyard was constructed in the spring of 2010, with a finished height of 16 feet using 20' x 6" larch, tamarack and cedar posts. Aircraft cable (5/16") was used for trellis wires. A complete list of materials and videos on the construction of the UVM Extension hopyard can be found at www.uvm.edu/extension/cropsoil/hops.

The prior crop was an alfalfa/grass crop. The hop beds were prepared by first moldboard plowing only the area where the hops were to be planted. The area was then rototilled to further break up the soil to prepare for planting. This left a strip of grass/alfalfa between the rows of hops. The tillage was implemented prior to construction of the hopyard. Once the hopyard was constructed there were two vegetative hop cuttings planted per hill on August 4th, 2010. The experimental design was a randomized complete block with three replicates; treatments were varieties. Hills of hops were planted 7 feet apart, and rows were spaced at 10 feet. Each plot consisted of five consecutive hills. From planting to harvest, plants were watered with drip irrigation as needed. In-row rototilling and hand weeding was used to control weeds, and as the weeds were brought under control, rows were trained with two strings of coir (coconut fibre) per hill, fertilized, and mulched with hardwood mulch. Pro-Gro® 5-3-4 and Probooster® 10-0-0 (North Country Organics) were applied to give 50 lbs plant available N, 40 lbs P, and 80 lbs K per acre. Boron was also applied at a rate of 10 lbs/acre. As the previous crop had been plowed-down legume/alfalfa we calculated 25 lbs of additional N credit. On June 6 and 7, Chilean nitrate was sidedressed at the rate of 50 lbs N.

On June 13, 2011, downy mildew (*Pseudoperonospora humuli*) was identified, and Regalia (Marrone Bio Innovations, EPA Reg. No. 84059-3), an extract of

Variety	Date harvested	Dry matter %
Cascade	24-Aug-11	22.0
Cascade	26-Aug-11	22.6
Centennial	2-Sep-11	23.7
Chinook	2-Sep-11	23.3
Chinook	6-Sep-11	23.5
Cluster	11-Aug-11	19.1
Cluster	12-Aug-11	18.9
Crystal	12-Sep-11	21.2
Crystal	14-Sep-11	21.4
Fuggle	24-Aug-11	23.6
Fuggle	6-Sep-11	22.0
Galena	31-Aug-11	24.0
Glacier	6-Sep-11	22.1
Glacier	8-Sep-11	23.1
Glacier	14-Sep-11	25.8
Liberty	2-Sep-11	*
Mt. Hood	2-Sep-11	21.4
Newport	14-Sep-11	25.1
Nugget	6-Sep-11	22.7
Perle	2-Sep-11	25.3
Saaz	24-Aug-11	23.7
Santiam	6-Sep-11	19.2
Santiam	14-Sep-11	22.5
Sterling	13-Sep-11	21.4
Sterling	14-Sep-11	23.6
Tettnang	31-Aug-11	24.3
Tettnang	2-Sep-11	23.2
Vanguard	31-Aug-11	26.5
Vanguard	2-Sep-11	21.9
Willamette	31-Aug-11	25.6

*Indicates not enough sample to measure

Reynoutria sachalinensis, was sprayed three days later using a Fimco 45 gallon trailer sprayer equipped with a hand gun and pulled by a John Deere 20 hp riding lawn mower. Regalia® is labeled for use on hops against both powdery mildew (*Podosphaera macularis*) and downy mildew, and is a plant extract that is used to help bolster a plant's natural defense mechanisms. It was applied as per label specifications. Starting on June 29, 2011, three leaves per hill and two hills per plot were scouted weekly for presence of insect pests, diseases, and beneficial insects. Potato leafhoppers (*Empoasca fabae*) and two-spotted spider mites (*Tetranychus urticae* Koch) were identified in the hopyard and determined to be above economic threshold. Economic thresholds for potato leafhoppers in hops has not been documented, but with an in-depth literature review, it was determined that two leafhoppers per leaf was economically damaging to organically grown hops. Economic thresholds for two-spotted spider mites have been determined in the Pacific Northwest to be 1-2 spider mites per leaf in June or 5-10 per leaf in July. Regalia was again sprayed as a preventative measure against downy mildew, and was tank-mixed with Pyganic (McLaughlin Gormley King Company, EPA Reg. No. 1021-1771) and Aza-Direct (Gowan, EPA Reg. No. 71908-1-10163). All are OMRI-approved for use in organic systems, and were applied at rates specified by their labels.

Hop harvest was targeted for when cones were between 20 and 25% dry matter. Hop bines were cut in the field and brought to the barn to be handpicked on a table. Harvest date by variety can be found in Table 1. Hop cones from each plot were sent to Alpha Analytics in Yakima, WA where they were analyzed for alpha and beta acids and Hop Storage Index. Yields are presented at harvest moisture and at 8% moisture on a per hill and per acre basis. Per acre calculations were performed using the spacing in the UVM Extension hopyard of 70 ft² per hill, 622 hills/acre. In all tables, the top performing variety can be found in bold. Varieties that were not significantly lower in performance than the highest variety in a particular column are indicated with an asterisk.

RESULTS

Harvest was targeted for when hop cones were between 20 and 25% dry matter (Table 1).

Cluster outperformed all other varieties, averaging 3.58 lbs/hill at harvest moisture, and 0.74 lbs/hill at 8% moisture, or 2,228 lbs/acre at harvest and 459 lbs/acre at 8% moisture (Table 2). Liberty was the worst performing variety, although statistically not different from Centennial, Crystal, Fuggle, Glacier, Liberty, Mt. Hood, Perle, Saaz, Santiam, Sterling, Tettnang, and Vanguard (Table 2).

Brewing values for select varieties are presented in Table 5. Some varieties did

Table 2. Yields at harvest moisture and at 8% moisture by variety.

Variety	Yield at harvest moisture		Yield at 8 % moisture	
	lbs/hill	lbs/ac	lbs/hill	lbs/ac
Cascade	1.71	1060	0.41	254
Centennial	0.44	273	0.11	70.0
Chinook	1.20	747	0.30	189
Cluster	3.58*	2230*	0.74*	459*
Crystal	0.37	232	0.09	53.8
Fuggle	0.13	77.8	0.03	19.3
Galena	1.87	1170	0.49	303
Glacier	0.87	539	0.22	138
Liberty	0.02	12.3	0.00	0.0
Mt. Hood	0.53	329	0.12	76.7
Newport	1.54	959	0.41	257
Nugget	1.40	870	0.35	217
Perle	0.07	43.2	0.02	12.0
Saaz	0.05	28.4	0.01	7.3
Santiam	0.31	193	0.06	40.4
Sterling	0.05	31.9	0.01	7.9
Tettnang	0.08	48.9	0.02	12.6
Vanguard	0.37	227	0.09	58.8
Willamette	1.60	993	0.41	256
Mean	0.84	526	0.20	127

not yield enough sample to be tested for brewing values. Alpha acid percentages for Cluster, Cascade, Galena, and Vanguard fell within industry averages. Nugget and Willamette exceeded industry alpha acid averages (Figure 1). Beta acid levels for Centennial, Cluster, Crystal, Mt. Hood, Newport, Nugget, and Santiam all fell within the industry averages. Cascade, Chinook, Fuggle, and Willamette all had beta acid levels higher than industry averages (Figure 2).

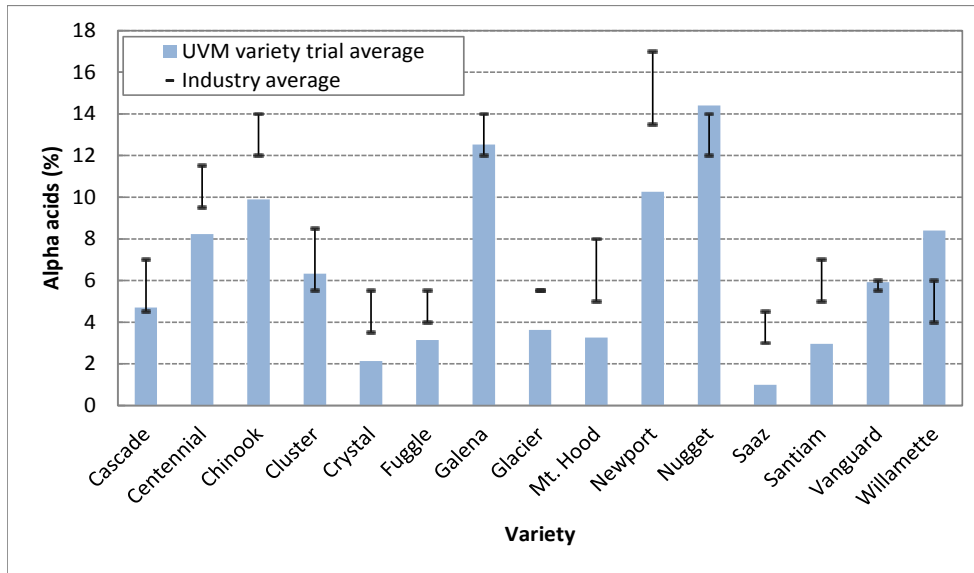


Figure 1. Alpha acid levels from the UVM Extension hopyard compared to industry averages calculated from values presented by Hopunion CBS, LLC and Yakima Chief, Inc.

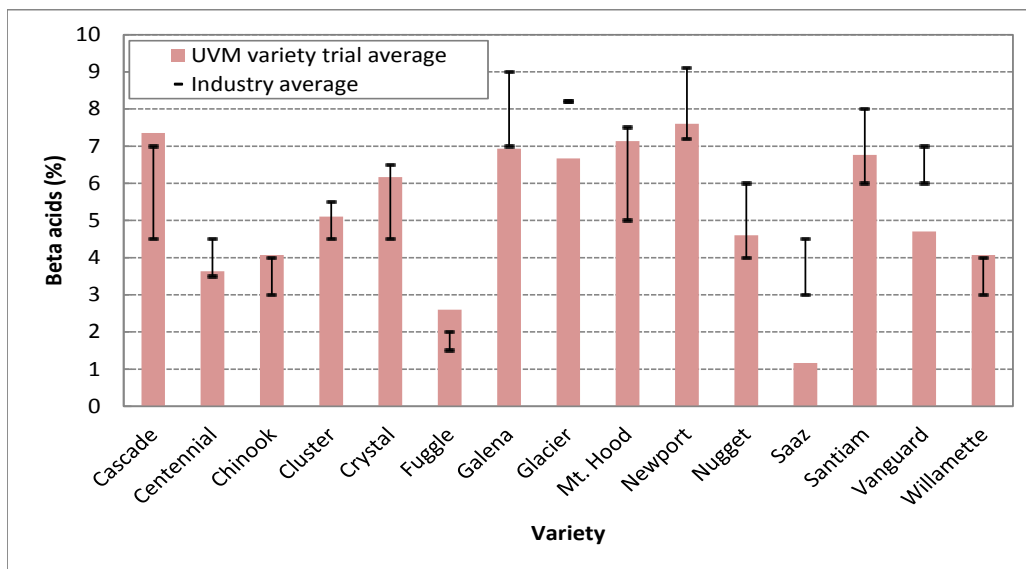


Figure 2. Beta acid levels from the UVM Extension hopyard compared to industry averages calculated from values presented by Hopunion CBS, LLC and Yakima Chief, Inc.

DISCUSSION

The UVM Extension hopyard was planted in August of 2010, putting the yard at stage of maturity between one and two year old plants when the above results were documented. According to Jason

Perrault, a fourth generation hop grower who presented at the UVM Extension 2010 Winter Hops Conference, first-year yields are generally assumed to be approximately 25% of a mature yard's yields. Some varieties, such as Cluster and Galena, yielded well for first year-plants. Other varieties, namely Santiam, Fuggle, Tettnang, Perle, Sterling, Saaz, and Liberty, did not thrive nor yield well. Hops, like grapes, have *terroir*: their brewing characteristics and oil content are reflective of their microclimate. Hops grown on the East Coast, even though genetically the exact same, will not be like hops in the Pacific Northwest due to different soils and different climates. Hops grown in the Northeast will present unique brewing characteristics. It is important to evaluate hops in different localities to develop geographically specific profiles for varieties that grow well in those regions.

We are encouraged by the first year yields and performance of the hopyard. However, a perennial crop needs time to express its full potential. A hop plant is considered at maximum production in year 4 of its lifespan. Therefore continued research is a necessity to fully document appropriate varieties for this region. If funding is obtained we plan to continue the variety trial research experiment. It should be noted that this is the first hops research trial to be established in the Northeast. It is also the only certified organic hops research trial in the Northeast. Therefore the data and information is being sought from multiple states.

Leafhopper Prevalence in Variety Trial

The research hopyard has allowed our group to collect other relevant and important data. This has included pest and beneficial insect data. This season leafhopper damage to hops was documented.

Variety	Leafhoppers per leaf	Significance
Tettnang	0.42	a
Centennial	0.75	ab
Willamette	0.75	ab
Fuggle	1.58	abc
Perle	1.67	abc
Cluster	1.83	abcd
Chinook	1.92	abcd
Glacier	2.33	abcde
Sterling	2.33	abcde
Nugget	2.67	abcde
Galena	3.08	bcde
Casade	3.42	cde
Vanguard	3.58	cdef
Santiam	3.83	cdefge
Liberty	4.33	defgh
Crystal	4.58	efgh
Newport	6.00	fgh
Mt. Hood	6.25	gh
Saaz	6.58	h
LSD (0.10)	2.50	
Hopyard average	3.05	

This is not a pest in the PNW and hence there is little data or outreach available on the topic. The hopyard enabled us the opportunity to collect this data and will help us develop additional research proposals. Our hopyard is located in an alfalfa field, and leafhopper damage was first noticed after the first alfalfa cut. Upon scouting the hopyard for pests and diseases, the infestation levels were determined to be economically significant. We found there is a significant difference between levels of leafhoppers between varieties ($p < 0.10$) which suggests this pest has a preference for certain varieties over others. The varieties responded the same across all sample dates which means there is a true difference in the level of leafhoppers between varieties that was not influenced by the sample date ($p < 0.10$).

At this time it is unknown what draws leafhoppers to certain varieties or perhaps

repels them from another. It may be due to the plant morphology as with certain leafhopper resistant alfalfa varieties which have leaf glands and hairs that make them undesirable to leafhoppers. Saaz exhibited the highest average of leafhoppers per leaf across the four sample dates while Tettnang had the lowest. We have several hypotheses as to what characteristics of the hop plant drive this trend, such as genetic differences, alpha acid levels, or nutrient levels in the hop. However, further research is needed to study and evaluate the leafhopper and its patterns before any conclusions can be drawn or recommendations made.

Hop Outreach and Education

A goal of this program is to provide potential, new, and established hop growers with high quality and relevant educational resources. A variety of educational resources and outreach events has been implemented throughout the project and are described below.

A HOP WEBSITE (www.uvm.edu/extension/cropsoil/hops/) was created as part of this project. The UVM Extension Crops and Soils Hops Page presents information on hop production collated from all over the country, interspersed with UVM Extension updates, research, and conference proceedings. Between January, 2011 when the grant was awarded, and September 28, 2012, the Hop Page has been viewed **9,264 times**. The Hop Page is host to the Brewer Survey, a continuation of Rosalie Wilson's work on collecting data from New England brewers on their needs and wants from local hops producers. The Hop Page also hosts the Grower Survey, which surveys visitors on their hop production methodologies. The purpose of the Grower Survey is to continually collect data on the most common hop production practices in the Northeast, and identify problem areas and areas that are in need of improvement. The surveys were a result of this project and are attached to the report. Several bulletins on hops fertility management, hop trellis construction costs, organic fungicides in hops, and pest and beneficial insect updates have all been published on the UVM Extension Crops and Soils webpage.

UVM Extension Crops and Soils Program Hops Page: www.uvm.edu/extension/cropsoil/hops

- Fertility Guidelines for Hops in the Northeast - <http://www.uvm.edu/extension/cropsoil/wp-content/uploads/HopFertilityManagementNE.pdf>
- Potato Leafhopper Damage in Hopyards - <http://www.uvm.edu/extension/cropsoil/wp-content/uploads/Leaf Hopper Article.pdf>
- Managing Powdery Mildew of Hops in the Northeast - <http://www.uvm.edu/extension/cropsoil/wp-content/uploads/PowderyMildew.pdf>
- Borderview Farm Hopyard Construction Costs - <http://www.uvm.edu/extension/cropsoil/wp-content/uploads/Hopyard-labor-materials-costs.pdf>
- Borderview Farm Hopyard Irrigation System - <http://www.uvm.edu/extension/cropsoil/wp-content/uploads/Hopyard-irrigation-materials-costs.pdf>

Three YouTube videos were produced that detailed the construction of the hopyard, and are available on the UVM Extension Crops and Soils YouTube Channel:

<http://www.youtube.com/user/cropsoilsvteam>. Constructing a Hopyard, Parts 1-3 have a total of **25,781 views** as of September 28, 2012. A crop camera was placed in the hopyard in 2011,

snapping photos every hour throughout the growing season. The Hop Cam video that was a result of this project can also be found on the UVM Extension Crops and Soils YouTube Channel. A video was also made on hop stringing and training, entitled Organic Hopyard Variety Trial – Year 2 Spring Checklist, with **1,480 views**. A YouTube video was also developed on the hops harvester designed by UVM Extension, and currently has **2,426 views**.

UVM Extension Crops and Soils YouTube Channel: <http://www.youtube.com/user/cropsoilsvteam>

- Constructing a Hopyard Part 1 - <http://www.youtube.com/watch?v=vPF7QIVGgtA&list=UU7sh59UG2pKqfmPMfaVxpbA&index=26&feature=plcp>
- Constructing a Hopyard Part 2 - <http://www.youtube.com/watch?v=QrRIyWlZTTs&list=UU7sh59UG2pKqfmPMfaVxpbA&index=25&feature=plcp>
- Constructing a Hopyard Part 3 - <http://www.youtube.com/watch?v=P0f0OqwoKGM&list=UU7sh59UG2pKqfmPMfaVxpbA&index=17&feature=plcp>
- Organic Hopyard Variety Trial – Year 2 Spring Checklist – <http://www.youtube.com/watch?v=lxuBuCvAsuc&feature=plcp>
- The Mobile Hop Harvester - <http://www.youtube.com/watch?v=2iZIkdozeXo&feature=relmfu>

The UVM Extension hops blog “What’s Hoppening”, hosted on the UVM Extension Crops and Soils website, has **121 subscribers**, and **49 posts**. UVM Extension Crops and Soils hops blog “What’s Hoppening”: <http://www.uvm.edu/extension/cropsoil/whats-hoppening>

Sample Pest Posts:

- Hop Pest – Eastern Comma: <http://www.uvm.edu/extension/cropsoil/hop-pest-eastern-comma>
- Spider Mite Destroyers and Spined Soldier Bugs: <http://www.uvm.edu/extension/cropsoil/spider-mite-destroyers-and-spined-soldier-bugs>

Sample Hop-News posts:

- Northeast Hop Alliance Fall Hop Conference and Annual Meeting - <http://www.uvm.edu/extension/cropsoil/neha-fall-hop-conference-and-annual-meeting>
- Hop processing equipment for sale - <http://www.uvm.edu/extension/cropsoil/hop-processing-equipment-for-sale>
- Hops Recordkeeping Booklet - <http://www.uvm.edu/extension/cropsoil/hops-recordkeeping-booklet>

During the project period, UVM Extension has hosted two hops conferences. In 2011, the UVM Extension Winter Hops Conference was held at the Trapp Family Lodge in Stowe, VT, with **118 attendees**. At the conference, Adam Krakowski presented on the history of hops production in the Northeast. Dr. John Henning, a research plant geneticist for the USDA-ARS Hop Breeding and Genetics program at Oregon State University discussed his breeding program, as well as strategies for achieving high-quality hop production, and the challenges and opportunities presented by a low-trellis system. Roger Rainville, star of the UVM Extension Constructing a Hopyard YouTube series, presented on how to construction a hopyard and fielded numerous questions from the

audience. A Brewer Panel was also on hand with local brewers discussing their excitement about local hops. The Panel fielded questions from the audience, and dispensed advice on how to successful market hops to brewers. 100% of respondents to the post-conference survey rated the conference Good or Excellent. 96% stated that the conference was educational and interesting, and 80% stated that the conference inspired them to learn more. 71% of respondents who were harvesting hops were getting under a half pound of yield per plant. Conference proceedings can be found at <http://www.uvm.edu/extension/cropsoil/hops>.

In 2012, the UVM Extension Winter Hops Conference was held at the Sheraton Hotel in South Burlington, VT with **137 attendees**. At the conference, a farmer panel discussed their successes and setbacks that they've encouraged on their hop farms. Daniel Sharp from Oregon State University joined us to discuss the aroma compounds of hops, and how they can be affected by mismanagement at harvest. Ann Hazelrigg from the UVM Plant Diagnostic Clinic discussed how to identify problems in Northeastern hopyards and the basics of pesticide rules and regulations. She also discussed the different spray equipment available to hop growers, and how to calibrate them. Students from the UVM School of Engineering who had designed two small-scale hop balers gave short presentations on their models. Roger Rainville gave a presentation put together by Chris Callahan, who was unable to join us due to illness. Chris Callahan and Roger Rainville were largely in charge of designing and fabricating the small-scale hop harvester. Video footage of the harvester in action was shown, and questions fielded from the audience.

96.8% of grower respondents stated that the hop conference met their expectations, with one participant stating "Well done- as a new grower I have tried different things and it was good to hear other's experiments (success and failures)." 100% of brewer respondents said the conference met their expectations. 95% of grower respondents stated that the UVM Extension Hops Program has helped them start or expand their hopyard, and 73% stated that the research and outreach performed by UVM Extension has helped them improve their yields. One grower respondent stated: "Very helpful and informative as always." 100% of brewer respondents stated that the work done by UVM Extension has increased their knowledge and awareness about hops grown in the Northeast. 76% of grower respondents stated that the work done by UVM Extension has helped them find markets and/or connect with brewers, and 83% of brewer respondents said that the conferences and workshops hosted by UVM Extension have helped them connect with local growers. 90% of brewer respondents stated that they have noticed a difference in the supply of regionally-produced hops because of the research and outreach performed by UVM Extension. 97% of grower respondents intend to expand their production. One participant stated: "This is a great conference. Can't wait 'til next year!" Another said "Keep the info and excellent projects coming. You have really done a great job promoting this crop & market." Another remarked: "Thank you so much. An incredibly helpful program."

89% of brewers stated that their brewery intends to buy or continue buying local hops if the supply exists. 100% of brewers stated that they were satisfied "for the most part" with the quality of the local hops that they have been presented with, but noted the lack of brew analysis as a hindrance. Quality parameters were a serious barrier to purchasing locally-produced hops to 63% of brewers,

and a noticeable barrier to 37%. 100% of brewer respondents stated that post-harvest processing and packaging were a barrier to purchasing locally-produced hops. 62.5% stated that the scale of what is available locally is a serious barrier to purchasing locally-produced hops. Harvesting and pelletizing were both independently noted as serious barriers. 100% of brewers stated that they expect that the demand for beer made with local hops will increase, and intend to respond to that demand. One brewer said “The conference has provided a fair amount of information and piqued my interest in Eastern grown hops. My full support is your way. Anything I can help with I'm happy to do so.” Conference proceedings can be found at <http://www.uvm.edu/extension/cropsoil/hops>.

Seven on-farm field days were held in Vermont and Massachusetts with more than **600 attendees**.

On July 8th, 2011, Fletcher Bach and Ian Birkett of Square Nail Farm in Ferrisburgh, VT led a farm tour that looked at alternate methods of hopyard construction and trellising design. Also highlighted was fertility management in first year hops production. Local brewers were given the opportunity to discuss their needs and desires in local hops production. There were **30 attendees**.

Pest management in Northeastern hopyards was discussed at the annual Crops and Soils field day at Borderview Farm in Alburgh, VT on August 4th, 2011, where the UVM Extension research hopyard is located. Also featured was UVM Extension's discovery of potato leafhopper hop varietal preferences. There were **225 attendees**.

The newly designed UVM Extension hop harvester was showcased at Four Star Farms in Northfield, MA on August 25th, 2011 to **50 attendees**.

The newly designed UVM Extension hop harvester was showcased at Borderview Farm in Alburgh, VT. Due to Tropical Storm Irene in 2011, the field day was rescheduled to September 7th, 2011, and only **12 attendees** could make it. Such a small group allowed for some in-depth conversations about pest management, harvest timing, post-harvest handling, and packaging.

The UVM Extension hopyard was showcased in the annual Crops and Soils Field Day on August 9th, 2012 at Borderview Farm in Alburgh, VT to **286 attendees**. The hop variety trial was discussed, as were Integrated Pest Management practices.

On August 14th, 2012, a field day was held in Gilbertville, MA at Steve Prouty's Cloverhill Farm, with **34 attendees**. Pest management, harvest timing, and post-harvest handling were discussed. 100% of survey respondents stated that the field day met their expectations. 100% stated the UVM Extension Hops program has helped them start or expand their hopyard and 50% stated that it helped them improve their yields. 63% stated that the research and outreach performed by UVM Extension has helped them improve the quality of their hops. 90% of respondents stated that the work done by UVM Extension has helped them find markets and/or connect with brewers. 80% of respondents stated that the work done by UVM Extension has helped them implement sustainable practices in their hopyard.

Finally, a field day was held at Addison Hop Farm in Addison, VT, with **89 attendees**. Hop trellis design, the economics of hops production, harvest timing, harvest machinery, drying techniques, packaging, and storage were all discussed. 100% of respondents stated that the field day met their expectations. 100% of respondents stated that The UVM Extension hops program has helped them start or expand their hopyard and improve their yields. 100% of respondents also stated that the research and outreach performed by UVM Extension has helped them improve the quality of their hops. 60% stated that the work done by UVM Extension has helped them find markets and/or connect with brewers. 100% also stated that the work done by UVM Extension has helped them implement sustainable practices in their hopyard.

UVM Extension Northwest Crops and Soils Team was also present at the Vermont Brewer's Festival at the request of the Vermont Brewer's Association in both 2011 and 2012, and at the Massachusetts Brewer's Festival at the request of the Massachusetts Brewer's Guild in 2012. Both events provided excellent opportunities to discuss local hops with area brewers, and to answer any questions that the brewers might have.

In November 2011, Dr. Heather Darby, with assistance from Mark Magiera, brewmaster for Bobcat Café and Brewery in Bristol, VT, presented to 90 brewers at the Vermont Brewers Association Sensory Analysis Conference, highlighting the advantages of local hops, and the unique brewing characteristics offered from a regional product. Base brews single dry-hopped with Vermont produced varieties were brewed by Bobcat Café and Brewery and presented to the brewers for sensory analysis.

Twenty-five on-farm visits were conducted in MA and VT. **One hundred and ten phone calls** were fielded from hop growers and those interested in growing hops in MA and VT over the project period. Over **250 emails** were answered with hops questions from growers, brewers, and other interested parties. Questions answered included a broad range of categories including but not limited to pest management, fertility management, pest identification, feasibility, harvest moisture determination, drying, and hop production basics.

Dr. Heather Darby presented at the Northeast Hop Alliance Fall Conference in November, 2011, highlighting proper techniques and considerations for soil preparation in a hopyard and fertility recommendations to over **170 interested hop growers** from all over the Northeast.

In January 2012, Rosalie Madden and Heather Darby presented at the Northeast Organic Research Symposium in Saratoga Springs, NY on organic hop yield and quality in the Northeast. The Northwest Crops and Soils Team also presented a poster on potato leafhoppers in hops in the Northeast.

An article on "Organic Hop Production" was developed and published in Agronomy Journal. Samuel F. Turner, Chris A. Benedict, Heather Darby, Lori A. Hoagland, Peter Simonson, J. Robert Sirrine and Kevin M. Murphy. 2011. **Challenges and Opportunities for Organic Hop Production in the United States**. Agronomy Journal 2011 103: 6: 1645-1654.

A review article on “Low Trellis Hops Production” has been developed and is being reviewed by colleagues in Michigan and Washington. The article slated for publication in the Journal of Horticulture Science.

GOALS AND OUTCOMES ACHIEVED

The UVM Extension research hopyard has led to an initial report on the suitability of commercially available hop varieties to the Northeastern climate. As hops are a perennial crop, future research is needed to determine the suitability of these varieties over time, as the plants mature and as they are exposed to different pest and disease cycles. Data collected from the 2012 season has yet to be fully analyzed, but is expected to shed new light on hop variety suitability. Scouting data collected in the hopyard has also led to the discovery of varietal trends in potato leafhopper predation, something that has previously not been researched. Future work is needed with this particular pest, but also with hop pests in general. Pests that attack hops in the Northeast are different than those that are an economic threat in the Pacific Northwest. Through regular scouting in the experimental hopyard pests and diseases are being identified and information is shared with growers through our web resources. The goal was to develop local and relevant research for Northeast hop growers. The hopyard has allowed us to collect valuable information on fertility and pest issues in hopyards. Lastly, we are advisers to 3 growers that were awarded USDA SARE Farmer Grants to investigate fertility, trellis design, and harvesting questions on-farm.

The goal was to design a mobile hop harvester prototype. This was accomplished, and the blueprints have been made public on the UVM Extension Instructional Wiki page. The mobile hop harvester travelled to two farms in 2011, and to three farms in 2012. Many more farms also requested the use of the harvester, but we were unable to meet their needs due to delays from modifications in the design.

The goal was to develop relevant and practical educational programs and material. The outcome has been the development of a diverse array of materials and events that have been accessed by more than 1000 stakeholders. Based on post-conference survey data we have found that stakeholders are improving their hopyard production by accessing the materials. Future work needs to be done to document long term impact of the hops outreach program.

YouTube videos were made and publicized about hop growth, development, hop stringing and training, and other pertinent issues, such as setting up irrigation in a small-scale hopyard.

Twenty-five farm visits were conducted over the granting period in order to assist farms with production questions and pest management issues. 40 blog posts were made during the project period, covering topics from disease identification and management, to fertility, to harvest readiness calculations.

The annual Winter Hops Conference was full to capacity in both 2011 and 2012, with over 118 and 137 participants respectively, bringing together brewers, hop growers, and those interested in hops.

Hop growers were surveyed to determine production practices, production setbacks and issues, and to determining hop yields. Brewers were surveyed to determine their satisfaction with local hops, their willingness to invest in a local product, and any setbacks that they have encountered in purchasing and utilizing local ingredients.

BENEFICIARIES

The several hundred attendees at hop related events, and the several thousand viewers of hops YouTube videos and visitors of the UVM Extension Crops and Soils Hops Page are the beneficiaries of this project. The Northeast Hops Alliance and the New England chapter of the Northeast Hop Alliance are also beneficiaries as they have had the opportunity to access regionally based hops related research, and have had a hand in guiding the research conducted by UVM Extension. These beneficiaries include potential, new, and established hop growers throughout the US and Canada. Additional beneficiaries include other agricultural professionals such as Extension staff, University professors, and US or state government employees. The brewers of Vermont and Massachusetts have also been and will continue to be important beneficiaries as they now have broader access to locally produced hops.

As a result of this project as well as collaborative efforts with other organizations (NEHA, Cornell University), **9 breweries** in Vermont and **12 breweries** in Massachusetts, and numerous breweries in Maine, New Hampshire, Connecticut, Rhode Island, and New York are now purchasing local hops.

There have been 15 new commercial hop producers (New England and Eastern Canada) as a result of this project and collaborative efforts with other organizations. Based on our close interaction with these producers we have been able to assist them with production information. One of the producers commented “I have always wanted to grow hops but never felt like I would have the support or information I would need to be successful. With your program I now feel confident to implement my new crop”. Most of these new growers have just established yards in 2011 or will establish in 2012. Hops produced on first year plants for all new farmers were quickly purchased by eager brewers. One brewer commented that he “wanted to use local hops but he wasn’t able to find any”.

LESSONS LEARNED

Lessons learned by the project staff are numerous. The best way to be able to help producers is to “do it ourselves” so we can really know the production challenges that are being faced by growers. The experimental hopyard is helping us collect valuable data but also allowing us to “experience” hops just like a grower. Through this process we are able to alert growers when pests arrive and/or share our mistakes with new growers.

Hops are a complex crop. There are significant startup costs, both economically and in time and labor. Constituents have commented how invaluable they have found the Building a Hopyard YouTube videos and construction costs fact sheets, and how much they have appreciated the opportunity to be able to visit a hopyard prior to constructing one themselves.

Variety selection is a major decision, and we are proud to be able to offer some baseline data on variety suitability through our research. Hops are very disease susceptible, particularly to downy mildew, which is a consideration that every grower should be undertaking, but other pest factors seem to be worth consideration as well. There are numerous hop pests and beneficial insects specific to the Northeast that are not found in the main hops production areas of the world. Further work is certainly needed in this domain. Further research is needed in the efficacy of organic chemical controls of pests found in the Northeast, and to determine relevant economic thresholds.

Planting varieties that don't thrive or yield well in this climate is economically unsound. Our first year harvest data is an indicator of the potential of each of the 19 varieties trialed, however, the preliminary data from the 2012 harvest indicates that these trends don't hold true from year to year. As hops take three years to reach peak production, further research is needed.

Small-scale infrastructure is a continued stumbling block in hops production in the Northeast. The mobile hop harvester designed courtesy of a SCBGP grant has taken steps to alleviate this issue, as has UVM Extension's work with small-scale hops balers and oasts. The future bears great promise now that these works have been completed and made publicly available.

CONTACT INFORMATION

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PROJECT 7: Harvest New England Competitiveness – Final Report

PROJECT SUMMARY

New Englanders seldom think of their region as being plentiful and offering a diverse selection of agricultural specialty crops. Through increased use of the Harvest New England (HNE) logo by producers, wholesalers, and grocery stores, residents of New England will have an increased awareness and greater knowledge of the availability of regional produce.

As a result of activities conducted by HNE the following was accomplished:

1. Increased marketing of New England specialty crops.
2. Increased awareness of the HNE logo and New England specialty crops.

This was accomplished by:

1. Hosting two New England-wide marketing conferences

2. Redesigning the HNE website into a more user-friendly, information-filled website.
3. Developing the HNE logo brand guidelines to inform users how to properly use the logo to keep the standards of the logo consistent
4. Producing banners to line the Avenue of States on the Eastern States Fairgrounds during the annual Big E and year round.

The HNE logo was promoted to potential users, which include all specialty crop producers and distributors, and consumers at a variety of venues and opportunities. These venues will included the 2011 and 2013 Harvest New England Agricultural Marketing Conference and Trade Show, a complete redesign of the Harvest New England website, developing specification sheets for using the HNE logo, and installing light post banners on the Avenue of States during the Big E.

PROJECT APPROACH

- 2011 and 2013 Harvest New England Agricultural Marketing Conference and Trade Show.
 - In 2011, 392 specialty crop producers and 483 in 2013 were educated on how use the HNE logo and better market their agricultural specialty crop products to New England consumers. In 2011, 54 scholarships were awarded to specialty crop producers from around New England who expressed hardships and could not have attended the conference otherwise.
 - The conference received great responses and feedback. The conference evaluation in 2013 asked attendees that participated in both 2011 and 2013 conferences if they had an increase in sales as a result of marketing techniques learned at the conference. 78% of respondents said they did have an increase in sales thereby solely enhancing the competitiveness of specialty crops in New England.
- Harvest New England website.
 - The website was made more user-friendly for both for the consumers as well as producer, wholesalers, etc. The logo can now be easily downloaded by specialty crop producers, wholesalers, and grocery stores. On the homepage, an overview of the program and drop down menus leading both consumers and producers to information has been added. New “Consumer Pages” providing information on locating New England specialty crop products, seasonality guide, and links to pertinent information such as the New England departments of agriculture websites have been added.
 - A “Producers Page” was also added and includes information on using the Harvest New England logo, logo sheets, links to other webpages including the New England departments of agriculture websites, extension, among others. This is also the area where HNE can post timely information for the various specialty crop industries.
 - An events page was established. This is where the Harvest New England biennial conference can be highlighted along with any other relevant specialty crop-focused conferences.
- Spec sheets for the HNE logo.

- The original specification 'spec' sheets for the HNE logo has been expanded to a more comprehensive logo brand manual. The manual outlines not only specifics of colors and logo graphic design components, but how the logo should be used on promotion materials, in sponsorship opportunities, electronically, etc. This more detailed manual is available for download prior to and after someone requests the download of the HNE logo. This manual will encourage a consistent use of the logo by specialty crop producers, wholesalers, and grocery stores.
- 28 light post banners on the Avenue of States at the Eastern States Exposition during the Big E were installed in 2011. They remained up for the 2012 fair and are anticipated to be up for the 2013 fair as well.
 - This increased the visibility of the logo by 1,201,428 New England consumers in 2011; 1,365,896 in 2012; and 1,481,917 in 2013 during the height of the harvest season in the region. Attendance in 2013 was reported to be the highest ever since the exposition started in 1917.

HNE ensured these funds solely enhanced the competitiveness of New England specialty crops through the following procedures:

- 2011 and 2013 HNE Conference: Only specialty crop producers were given access to the HNE logo and only speakers pertaining to specialty crops received honorarium and other associated fees from these funds. Only specialty crop producers were awarded scholarships which was determined by an application process. Additional, non-SCBG funds were available to cover any expenses where non-specialty crop producers benefited or had the potential to benefit.
- Harvest New England website update: A disclaimer on the website specifying only specialty crop producers can utilize the HNE logo when marketing their product(s) regionally. Prior to downloading the HNE logo, producers are required to fill out an online form asking them their basic contact info and to list the general products for which the HNE logo will be used on.
- Spec sheets for HNE logo: A disclaimer prior to downloading the manual reminds producers that only specialty crop producers can utilize the HNE logo when marketing their product(s) regionally.

GOALS AND OUTCOMES ACHIEVED

GOAL 1:	To educate producers on how to use the HNE logo and better market their agricultural specialty crop products through the 2011 and 2013 Harvest New England Agricultural Marketing Conference and Trade Show.
PERFORMANCE MEASURE:	Specific questions on the evaluation form asked if specialty crop producers were better aware of how to use the HNE logo and market their specialty crop products as a result of attending the conference.
BENCHMARK:	Approximately 550 of the 800 attendees at the 2009 conference were specialty crop producers.
SUMMARY OF ACTIVITIES	A committee of representatives from around New England, in addition to all

of the HNE board members, participated in brainstorming, planning, promoting, and executing the conference.

ORIGINAL TARGET: At least 550 specialty crop producers will attend the conference the 2011 and 2013 conference. A minimum of 10 scholarships will be awarded to specialty crop producers at the 2011 conference.

ACTUAL TARGET ACHIEVED: In 2011, 392 specialty crop producers and 483 in 2013 attended the conference. 875 specialty crop producers in the end benefited from attending the HNE Conference.

54 scholarships were awarded to specialty crop producers.

At the 2013 conference 78% of respondents said they had an increase in sales as a result of marketing techniques learned at the 2011 and 2013 conference.

GOAL 2: To make the HNE website more user friendly and have a place where the logo can easily be downloaded by specialty crop producers as a result of updating and redesigning the site.

PERFORMANCE MEASURE: The number of logo downloads from the redesigned HNE website.

BENCHMARK: There is no benchmark to compare to at this time.

SUMMARY OF ACTIVITIES: A subcommittee of the HNE board of directors solicited three website firms and selected the most appropriate bidder. Website redesign and content was discussed and developed by the subcommittee and hired firm.

ORIGINAL TARGET: A total of 50 downloads of the HNE logo per year will happen from the website.

ACTUAL TARGET ACHIEVED: The information is still being collected at this time. However, it doesn't appear we'll meet the target of 50 downloads per year.

GOAL 3: To develop a specifications sheet, which will give users guidelines on how to properly use the HNE logo.

PERFORMANCE MEASURE: The number of requests or downloads of the spec sheet from the HNE website

BENCHMARK: There is no benchmark to compare to at this time.

SUMMARY OF ACTIVITIES: A subcommittee of the HNE board of directors updated the existing specifications sheets and worked with the website firm to have them added to the website in addition to the online form.

ORIGINAL TARGET: A total of 50 downloads or requests of the spec sheet for the HNE logo per year.

ACTUAL TARGET ACHIEVED: The information is still being collected at this time. However, it doesn't appear we'll meet the target of 50 downloads per year.

GOAL 4:	To increase visibility of the logo to New England consumers during the height of the harvest season in New England as a result of producing light post banners to be on display during the Eastern States Exposition's, Big E.
PERFORMANCE MEASURE:	The number of attendees during the Big E.
BENCHMARK:	In 2009, 1.26 million people attended the Big E.
SUMMARY OF ACTIVITIES:	A New Hampshire company was hired to design and print the light post banners. Eastern States Exposition staff installed the banners prior to the 2011 Big E.
ORIGINAL TARGET:	To have at least five, up to 12, light posts banners developed with the HNE logo, promoting the purchase of specialty crops.
ACTUAL TARGET ACHIEVED:	28 light post banners were installed for the 2011 Big E. They were also on display for the 2012 Big E. This allowed a total of 2,567,324 people to view the banners.

The 2011 New England Agricultural Statistics (most recent available) reported that specialty crop sales increased by 97% since 2009. While this cannot be attributed solely to this project, it can be said this project is a contributing factor.

BENEFICIARIES

Specialty crop producers throughout New England had and still have the opportunity to benefit from using the logo to promote their New England Grown products. A total of 875 specialty crop producers benefited from attending the HNE Conference in 2011 and 2013.

Over 4 million people were exposed to the HNE logo at the 2011, 2012, and 2013 Big E combined. This raised awareness of the logo and availability of New England grown specialty crops.

LESSONS LEARNED

- 2011 and 2013 Harvest New England Conference:
 - Conference planning and execution went quite smoothly both years with no serious problems or delays occurring.
- Harvest New England Website:
 - The HNE website has been completed. The project was more substantial than originally anticipated and the project timeline was drastically off from the original project narrative submission. The website has been live since July 16, 2013.
- Specification Sheets for the HNE Logo:
 - The 'spec' sheet project was also seriously underestimated however turned out to be more economical to produce a 17 page brand guidelines than just a one page spec sheet. The brand manual is available on HNE's website.
- Light Post Banners at the Big E
 - This project was completed without and problems or delays.

ADDITIONAL INFORMATION

[2011 Harvest New England Agricultural Marketing Conference and Trade Show](#)

[2013 Harvest New England Agricultural Marketing Conference and Trade Show](#)

Harvest New England Website: www.harvestnewengland.org

Light post banners on the Avenue of States:

**CONTACT PERSON**

Jaime L. Smith, Connecticut Department of Agriculture, 860-713-2559, jaime.smith@ct.gov

PROJECT 8: Apple Markets Internet Expansion – Previously Accepted**PROJECT SUMMARY**

The New England Apple Association Specialty Crop funds grant had four main goals, all designed to build traffic to its Internet website, newenglandapples.org:

- 1) Enhanced search engine optimization (SEO);
- 2) Increased Internet presence for Vermont and New England orchards, especially on the New England Apple Association website;
- 3) A revamped education section; and
- 4) A 2012 New England Apples calendar

The separate components of the project work together to enhance the marketing potential of individual orchards and the association's website.

The SEO project drives traffic to the website from a comprehensive range of electronic communication devices, and the work with individual orchards enhances both their listings on the association website, and their own website, to which their newenglandapples.org listing links. The calendar will educate consumers about New England apple varieties and orchards in their homes and businesses throughout 2012, and direct traffic to the site among consumers who are not already online.

Remaking the website's education section makes the website more dynamic and helpful to students, educator, and general consumers interested in learning about how apples are grown, for example, and their health benefits.

The project is the latest in an ongoing effort to develop the website's potential and keep its content timely and lively. Previous Specialty Crop grants from Connecticut, Massachusetts, and New Hampshire funded a 14-part series of video programs in the previous grant cycle, and several of these — such as those on pollination, pruning, and grafting — are a part of the new education section.

PROJECT APPROACH

For the **search engine optimization** (SEO) part of the grant, the Easthampton, Massachusetts, firm Right Angle reprogrammed the association's website menu system to include the name of each individual page in its URL as well its html page title. Right Angle also added a meta description to each individual page. The result is that searching for "New England Apple" returns the site in the number one position in Google, Yahoo, Bing and all major search engines. The system is also now in place to optimize for more specific searches like "Vermont Apples" or "Apple Picking in Vermont," which is part of the ongoing process.

For the maps, Right Angle designed and programmed the "Visual Orchard Finder," a custom map for each New England state containing a pushpin for each of the members for that state. These maps are tied into the existing member database, giving each member the ability to update the information presented on their map by updating their account record. Users can find local orchards by browsing to the map on any computer, pad or smart phone. They can then get specific information for each orchard including address, phone number, and directions.

The Search Engine Optimization part of the grant was completed June 1, 2011. The New England Apple Association has retained the services of Right Angle to continue to refine the new features and increase their effectiveness.

Beginning in November of 2010, independent contractor Christopher Weeks contacted member orchards throughout Vermont and the six New England states in a comprehensive effort to **update member listings** on the New England Apple Association website. The effort included updating basic address and contact information as well as orchard-specific details such as apple varieties grown and other products and services offered.

The project, completed July 2011, was an effort to not only keep vital member information up-to-date, but to educate orchards on the significance of their listings and to instruct them on how to update this information in the future.

Each orchard contacted received an email with an attached PDF on how to log-in and update their own listings — which can be done at any time throughout the year — as well as instructions on

how to register their orchard with Google Places, a revolutionary and free combination of Yellow Pages listing with a map and review center to keep their finger on the pulse of their customers. In this always-connected day and age, where the purchasing power often leans toward who is more Google-able, a business of any size cannot ignore this powerful service.

Every orchard listed on the association website was contacted and informed of the importance of their listing as well as the process for updating it. The response was extremely positive, both from orchards who were already aware of their listings and for those just coming to understand the benefits of being a New England Apple Association member orchard.

The layout of the **education section** of the website was redesigned and the text edited for clarity and length, and updated to reflect new information. The work was done by Associate Director Bar Weeks, a writer and former school teacher.

The home-page link to “Learn About Apples” now directs visitors to a landing page with instructions about how to receive a free copy of the association’s brochure/poster, “New England Apples,” plus links to video programs on grafting and pruning (two parts). Visitors to this introductory page can also choose hyperlinks for “Apples on the Family Farm,” “Nutrition,” “Life of a Tree,” and “From Flower to Fruit.”

The “Apples on the Family Farm” page includes revised, shortened text about the annual cycle of growth for apples. The “Nutrition” page now features a diagram in the shape of an apple illustrating nutrition facts in a more interesting way. “Life of a Tree” explains why grafting is necessary to produce individual varieties, and describes the process, with photographs. “From Flower to Fruit” describes the role of pollination in ensuring a good apple crop.

Please check out the website at the following address: <http://www.newenglandapples.org/>

The 2012 **New England Apples wall calendar** used photographs taken for this purpose over the previous 12 months by Russell Powell and Bar Weeks, the association’s executive director and associate director, respectively. Powell oversaw production of the calendar.

The 12”x12” commercially printed calendar features photography from a number of New England orchards, including Green Mountain in Putney and Scott Farm in Dummerston, plus photographs and descriptions of 12 apple varieties (one for every month) grown in the region:

<i>Month</i>	<i>Main image</i>	<i>Featured variety</i>
January	Scott Farm, Dummerston, Vermont	Roxbury Russet
February	Blue Hills Orchard, Wallingford, Connecticut	Gala
March	Brookfield, Orchards, North Brookfield, Massachusetts	Crispin (Mutsu)
April	Orchard at harvest	Empire
May	Spring bloom	Spencer
June	Lady apples	Orleans Reinette

July	IdaRed apples	Esopus Spitzenburg
August	Cold Spring Orchard, Belchertown, Massachusetts	Rhode Island Greening
September	Wealthy apples	McIntosh
October	Green Mountain Orchard, Putney, Vermont	Macoun
November	Multiple varieties	Cortland
December	Sheep's Nose apple	Honeycrisp
Back cover	Apple Hill Farm, Concord, New Hampshire	

The inside of the back cover provides listings with contact information and website addresses for New England orchards, including 16 from Vermont.

Each page directs viewers to the association's website, newenglandapples.org.

GOALS AND OUTCOMES ACHIEVED

The results have been extremely positive to date. During the peak harvest months of September and October, the number of hits to the website increased by nearly 50 percent from 2010:

<i>Month</i>	<i>Hits, 2010</i>	<i>Hits, 2011</i>	<i>Increase</i>
September	115,397	171,093	48%
October	124,062	182,334	47%
Total, September/October	239,459	353,427	48%

With just a few days remaining in 2011, the website has already attracted more than 100,000 more hits than in all of 2010, an increase of 17 percent. A similar increase was seen in unique visitors, and a 13 percent increase in total visitors:

	<i>Hits</i>	<i>Total visitors</i>	<i>Unique visitors</i>
2010	652,725	23,916	15,532
2011(through Dec. 29)	761,529	27,123	18,150
Increase	17%	13%	17%

These statistics show that we are well on our way of achieving our stated goal of a 20 percent increase in the number of hits experienced by the site in the 12-month period following the project's completion. We have already surpassed our goal of 63,000 hits per month (63,461). We capture this data through the analytics program embedded in our content management system and Google Analytics, and will continue to make monthly comparisons throughout 2012 and beyond.

Distribution of the 2012 New England Apples wall calendar began in September 2011, and continued through December 2011. New and existing member orchards received 15-30 copies of the calendar for promotional use, and the association distributed calendars to friends of the apple industry and the general public, including several public schools.

The calendar has been enthusiastically received by all recipients; from growers to consumers (we are, in fact, considering the possibility of doing another calendar for 2013). The original press run of 500 to 1,000 was increased to 3,000, with the additional funding provided by the New England Apple Association. This brought down the cost per calendar and greatly expanded its marketing potential.

BENEFICIARIES

All New England orchards benefited from the project, in a myriad of ways, including:

- Increased presence for their orchard on the Internet through free services such as Google Places and Google Maps;
- Comprehensive and enhanced listings on the New England Apple Association website; and
- Access to a powerful new marketing tool in the 2012 New England Apples wall calendar.

The calendar already is cultivating good will about the New England apple industry in general and toward the orchards distributing them, and it will publicize New England apples on a daily basis throughout 2012, when its greatest impact will be felt. As a result of this project, in 2012 we expect to match or exceed the dramatic increases in visitors and hits to the New England Apple Association website experienced in 2011.

LESSONS LEARNED

The calendar could not have succeeded without a year or more of planning, in large part to assemble an adequate range of photographs for the 12 months, as well as studio shots of the featured varieties. The photographs needed to be horizontal in orientation rather than vertical, come from a variety of orchards throughout New England, and represent the four seasons. Our experience producing a low-budget pilot calendar in 2010 gave us insights for this project about such critical decisions as the calendar size, paper quality, amount of text, and main image.

We have a lot to learn going forward now that people will begin displaying the calendar in their homes and offices, and giving us feedback. Anecdotally, however, our growers were so impressed with the calendar that they have already expressed a strong interest in producing another one for 2013, possibly with a customized tab at the bottom with information about individual orchards. This would increase each orchard's visibility, compared to the listing of orchards inside the back cover in the 2012 calendar, and we are exploring costs with our printer. In the meantime, photographers Russell Powell and Bar Weeks visited more than 40 orchards throughout the six New England states gathering new photography that could be featured in a new calendar.

The biggest change in our original proposal was to increase the press run for the calendar from 500 -1,000 to 3,000. We made the decision as we realized how beautiful the calendar would look and assessing its value as an educational and promotional tool, and to take advantage of a price break.

This enabled us to increase our supply to member orchards and provide calendars to a number of educational institutions with an interest in local agriculture.

The main lesson about the website is the need to coordinate editorial and technical work, since they are done by different people. Bar Weeks gradually has been learning how to make changes to the website without the aid of an outside contractor, but wholesale changes, such as those made to the education section, require a coordinated effort to ensure that the end result meets the editorial vision. Similarly, the data gained during the phone survey of growers needed to be promptly added to their listings to have an impact. Ensuring that the technical issues contributing to the website's success are resolved in a timely way requires ongoing monitoring on the part of a staff person such as Powell or Weeks.

CONTACT PERSON

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PROJECT 9: NH-VT Christmas Tree Association – Final Report

PROJECT SUMMARY

This was a multi-faceted project aimed at supporting Vermont Christmas tree growers through support of educational field meetings, attendance at local and regional fairs and web site improvements. It covered the two year period 2011-2012. The New Hampshire-Vermont Christmas Tree Association was the recipient of this grant. NHVTCTA has been in operation since 1956, and represents some 200 growers within the region. Our membership encompasses both large and small businesses, is geographically dispersed throughout the region and represents all segments of the industry (wholesale, retail, choose and cut, etc.). Plantation-grown Christmas trees became much more prevalent in the post WWII period, and today represent virtually all annual Christmas tree production. It is a mature industry, and faces problems associated with that maturity. Christmas trees have often been grown in a monoculture environment for many years, and the industry must take strides to guard against possible decline in tree vigor and quality because of this monoculture. It is important to provide continuing education to growers about advances in fertilization, soils, seed genetics, etc. in order to continue to provide a quality crop with market acceptance. It is also important to educate consumers with respect to the values of natural trees and to discourage the use of artificial trees. Producers also need assistance in the marketing of real trees and wreaths, especially through the use of an expanded web site. It was these factors which provided the necessity for current NHVTCTA efforts and the subsequent application for and receipt of funds made available through this grant.

PROJECT APPROACH

Assistance with field meetings – Three field meetings have been held annually during the two year grant period. Outside speakers were identified and engaged as presenters at these meetings. A level of expertise unavailable without the funding provided through this grant was made available to the membership. A variety of cultural, marketing, and business planning issues were identified that had or could have become problematic to successful Christmas tree growing, and alternative solutions were addressed.

Assistance at local and regional fairs – We attended the following fairs: Champlain Valley, Eastern States Exposition, NH Forest and Farmlands Exposition, Rutland (VT State) Fair, Tunbridge Fair and Windsor Fair. At each of these fairs we set up a display representing NHVTCTA. In all cases a real tree was displayed; in some cases we participated in and/or assisted in the management of a tree/wreath contest. We distributed brochures and provided information on farm location. And we provided consumer information on the benefits of a real tree. These fairs included a large regional fair with attendance of over 1 million to much smaller fairs with attendance of 30,000. This allowed us to reach many additional consumers and educate them as to the nature of Christmas tree farming and the advantages of real vs. artificial trees. Of equal importance, these local fairs gave us the opportunity to market our association and to help market member trees. This marketing effort was of primary importance in helping the consumer identify and locate local farms that allow cut-your-own.

Website assistance – Our web site was freshened and redone in time for the 2011 selling season. No further changes were made in 2012. In spite of a weak economy, sales were strong in 2011. While many factors contribute to strong sales, it is clear that a well-designed, easy to locate and easy to use web site may well be our most important marketing tool. Cut your own sales were strong throughout the region, and most wholesale growers indicated strong activity. Many if not most wholesale growers were sold out.

GOALS AND OUTCOMES

Assistance with field meetings – Three field meetings per year were held, and outside speakers were engaged. A level of expertise unavailable without the funding provided by this grant was made available. The increased knowledge available through these expanded meetings is only valuable if it is implemented. And once implemented its value can only be properly assessed based upon actual field experience. This is a long term issue and measurement of success is a long term process. Christmas trees take 8-10 years in the field to reach marketable size. Improvements in yield/quality can only be measured with the passage of time. For example, improved soils drainage techniques or changes in seed genetics and seed source are long term issues. Improved soils testing and fertilization can be measured more quickly, but even these take time to properly assess. While it is currently impossible to provide a quantitative assessment of the benefits of many of our field meetings, it is not impossible to speak anecdotally. At every meeting there have been members who have taken new knowledge and incorporated that knowledge into their business plan. There are reports of early success.

It is possible, nonetheless, to provide a quantitative assessment of field meeting attendance. Attendance has shown steady growth. Base line attendance in 2010 (the year before this grant was awarded) was 240. In 2012 it increased to 266. Attendance at our last meeting in 2012 was 105; at that same meeting in the 2010 baseline year attendance was 78. These represent attendance increases of 10.8% and 34.6% respectively. Our most recent (Fall, 2012) meeting had the highest attendance of any meeting within the past 5 years, despite the fact that it was held in the geographic extreme of our membership area. It should be noted, though, that two of the three meetings NHVTCTA holds annually are outside meetings, and weather can be a key variable. We try to select meeting sites in different geographic areas and with different farm emphasis (large wholesale versus smaller choose and cut, etc.) These criteria are also factors in meeting attendance. It should also be noted that this is also a mature industry with respect to average farmer age. This overall attendance increase has been accomplished in spite of the loss of some members due to age and retirement. And finally, it should be noted that these increased attendance numbers come at a time of consolidation in the industry, with an equal or greater number of trees being planted on a lesser number of farms. This provides further proof of the value of our expanded field meetings and use of professional presenters.

The true measure of increased knowledge is through production of a better tree, or through production of a tree of equal quality in a shorter length of time or at a reduced production time. Since Christmas trees require 8-10 years from planting to harvest, it is impossible to estimate at this time if the information we have provided to our membership has been helpful. But I cannot believe that it has not been. In addition to being NHVTCTA Executive Director, I am also a Christmas tree grower. I can specifically say that I personally saved over \$2000 last year by using a different type of lime, and I firmly believe that in addition to this cost savings I also increased the efficacy of the product. But liming is a long term process and it is impossible to measure increased efficacy with any degree of certainty in the short run. This information came to my attention through attendance at field meetings. We continually ask membership for input into our meetings, both as a means of measuring the usefulness of the material presented and as a means of addressing their particular problems and questions for future presentations.

Assistance at local/regional fairs - NHVTCTA exhibited in three fairs not previously attended, and expanded our presence at an additional fair. The goal was to educate consumers as to the value of real trees, and to provide education on proper tree care and difference in tree species. These fairs also provided the opportunity to market our association and to help market member trees. Representation at fairs was an effort at consumer education, and was aimed at the consumer rather than Christmas tree growers per-se. In the aggregate, attendance at the fairs we attended exceeded 1.3 million. Between 5000 and 10000 brochures were distributed.

Website assistance - Our web site was freshened and redone in time for the 2011 season. Sales for the season were strong; cut your own sales continued strong, and many wholesalers sold out. Analysis of the efficacy of any individual marketing effort in relation to other efforts is always difficult. It would be an overstatement to say that strong sales were solely attributable to our web

based marketing efforts, but it is not an overstatement to say that improved web based marketing played a significant role in strong sales. We can quantify, however, the number of hits to our web site at 208,797 hits, an increase of just over 14 percent.

BENEFICIARIES

The primary beneficiaries of this project were Christmas tree growers themselves. NHVTCTA has approximately 175 members. It is hoped that all of these members benefited. Approximately 70 percent of our membership attended at least one meeting. While we make every effort to provide information presented at meetings to those who did not attend that meeting, it is clear that the largest benefit will be to those who actually attended.

Benefits included training and education relative to new and improved cultural practices, and assistance with marketing through an expanded web site. They will benefit by growing a better product and assumedly increase their profitability. Local economies will benefit, because farmers purchase inputs locally. It is estimated that the local multiplier effect is between 4 and 5 (for each dollar spent by the farmer for his product, it is multiplied by a factor of 4-5 as it is passed through the economy to purchase fertilizer, fuel, household supplies, etc.). And of course consumers will be beneficiaries, both through receipt of information on tree care and safety and through receipt of a better product and a better experience.

LESSONS LEARNED

All of the projects supported by this grant are continuing program efforts rather than specific and finite projects with identifiable implementation periods and identifiable end periods. Our educational and marketing efforts must be continual. NHVTCTA accepted the funds made available through this grant with gratitude. As we move forward, hopefully other grants may be available. But NHVTCTA does not live in a vacuum. We realize that budget deficits must be brought under control, and that there will be increasing pressure as federal and state agencies allocate scarce resources among many worthwhile projects. It will be incumbent upon NHVTCTA “stand on its own feet” and to do its best to maintain these programs with internal funding and with less reliance on outside assistance. That will be a challenge.

ADDITIONAL INFORMATION

The website is www.nhvtchristmastree.org

CONTACT INFORMATION

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PROJECT 10: Beginner Farmer and Apprentice Workshops in Commercial Organic Vegetable Production – Final Report

PROJECT SUMMARY

A series of seven on-farm workshops for new and aspiring farmers were developed and offered on important production and business-related practices (Soils and composting; Organic plant disease management; Organic weed control; Food safety practices in production, handling and marketing; On-farm energy production and conservation; Marketing practices and strategies; Business and enterprise planning and analysis). The workshops provided attendees with up-to-date practical knowledge and information required for successful commercial organic production and commercial enterprises.

PROJECCT APPROAH

NOFA-VT received a sub-contract through a USDA Beginning Farmer Rancher and Development Program (BFRDP) to support the expenses associated with organizing, facilitating and evaluating 8 beginner farmer workshops held as part of our on-farm summer workshop series. Because of that, we requested permission to use the \$3,496.50 award to support beginner farmer marketing and business planning workshops at NOFA-VT's Direct Marketing Conference, scheduled for January 8, 2012. In addition, we requested a 30 day extension of our contract to accommodate this change of scope, which was granted. The following list outlines the activities that were proposed and those performed with the change in scope:

Winter 2010-11: Develop workshops' content; identify expert presenters for each workshop; identify host-farms and develop farmer-host involvement on each farm

Performed: Fall, 2011 outreach to specialty crop producers to identify priority workshops, and secure facility.

Early Spring, 2011: Develop workshop materials; develop and implement publicity and outreach strategies

Performed: Fall/Winter 2011/2012 confirm workshops with presenters, outreach and publicity of Direct Marketing Conference.

Spring-Fall, 2011: Host workshops; continue publicity and outreach

Performed: January, 2012: Host conference

Fall, 2011: Project evaluation and summary of outcomes

Performed: January 2012 Evaluate conference and share with presenters

Project partners: The 13 member board of the Vermont Farmers Market Association (VTFMA), a project of NOFA-VT, were instrumental in workshop development, and assisting with logistics on the day of the conference. A representative of the Vermont Agency of Agriculture and Markets serves on that board. In addition, 4 CSA farmers in Vermont served as advisors, helping develop and present workshops.

GOALS AND OUTCOMES ACHIEVED

The original proposal was to organize 7 summer workshops to reach 40-60 beginning specialty crop producers. We ended up organizing 12 workshops for specialty crop producers at the January, 2012 Direct Marketing Conference attended by a total of 140 participants, 89 of whom were specialty crop producers. The workshops were attended by farmers who sell fruits and vegetables at farmers markets or Community Supported Agriculture farms, or farmers market managers who manage specialty crop vendors. Since the vast majority of direct markets at Vermont only sell specialty crops, it was an easy way to make sure we were targeting that audience. There were a total of 140 participants at the conference. The 12 workshops that were offered for specialty crop producers, were attended by a total of 89 specialty crop producers. There were 7 other workshops offered predominantly for farmers market managers (not themselves producers, but who manage specialty crop vendors) who were the bulk of the 51 non specialty crop producers referenced in your question. Grant funding was only used to cover the cost of presenters and organizing the 12 workshops for specialty crop producers.

Workshops held and the number of attendees are as follows:

Protecting Your Markets with Safe Food Practices (16 attendees)

Merchandising for Maximum Sales (46 attendees)

Expanding Direct Markets to Include Limited Income Shoppers (12 attendees)

Leveraging Customer Relationships into Year Round Sales (21 attendees)

Pricing for Profit – Strategies for Diversified Farms (34 attendees)

Hosting Visitors to Build Direct Marketing Relationships (18 attendees)

Marketing Toolkit: Planning and Measurement Strategies (57 attendees)

Effective Off-Farm CSA Management (14 attendees)

Business Planning for Farm Success (23 attendees)

Safe and Effective Food Demos (17 attendees)

Brand Development (18 attendees)

Strategies for Grassroots Fundraising (18 attendees)

An evaluation completed at the conference was filled out by 58 participants. The first question, with 55 people responding, asked how they would rate the overall quality of the conference. 50 respondents said the conference was excellent or good (91%), and 5 answered that it was fair (9%).

When asked if they learned any new techniques they will use on their farms, 39 participants answered yes, and 6 answered no. The majority of respondents wrote that the following information was the most helpful: pricing, advertising, food safety and general marketing.

BENEFICIARIES

The primary beneficiaries of this project were the specialty crop producers who sell at direct markets in Vermont, including farmers markets, CSAs and farm stands. Other groups that benefited from this work include farmers' markets managers and organizers who benefit from improved marketing tools. This project was designed to help attendees to be successful farmers and develop successful markets, which in turn will provide improved sales opportunities for hundreds of specialty crop producers throughout Vermont. We operated under the assumption that the better skilled the participating farmers are, the stronger the market – and the stronger the market, the higher the gross sales for specialty crop producers.

LESSONS LEARNED

The project was very successful at fulfilling the scope of the work – advancing the marketing skills for specialty crop producers in Vermont. The workshops were well attended, and the evaluations were positive. The evaluations were helpful because we learned what other educational opportunities participants are seeking. What we learned is that there is a growing disconnect between the sophistication of consumers at markets, and the market management that is not keeping pace with growing consumer needs. For example, consumers are seeking convenience, one-stop shopping, and are increasingly relying on social media for information about purchasing options. Farmers selling at direct markets, and the managers who play an important role in the success of those markets, have not all kept pace with this new consumer. Many of the participants answering a question on the evaluation about “the biggest challenge they face” responded about the need to “keep current at website updates,” “need to get our face and message out there, just producing good crops is not enough anymore,” “lack of time to maintain Facebook, website, blog and Twitter...and still keep up with face to face marketing.” Of course, there are many customers who shop at farmers' markets, participate in CSAs and shop at farm stands because they are seeking the kind of shopping experience that is down to earth, and perhaps a step removed from electronics for a period of time; but since the markets all want to increase customer traffic, they need to reach the 97% of consumers who are currently not shopping at direct markets.

The other lesson we learned is that specialty crop producers need additional information about food safety, as many states are increasing regulations, clamping down on product sampling at markets, and markets are transitioning from seasonal events to year-round markets and may have to meet the stricter requirements of retail stores. When we asked what additional workshops participants would like to attend in the future, several respondents said “events at markets and food safety – from on-site to carry-out,” and “updates in current state health regulations.” Finally, we heard from a lot of participants about their on-going challenge to increase access to low-income customers. Although half of the markets in Vermont have EBT machines, and several offer incentives to double the value of their electronic benefits, a lot of farmers want help in “reaching non-traditional customers for my farm and market.”

CONTACT PERSON

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PROJECT 11: Exemplary food safety-related production and marketing practices for commercial organic and conventional vegetable and small fruit producers – Final Report**PROJECT SUMMARY**

All commercial vegetable and fruit growers, large and small, organic and conventional, can benefit from reliable, up-to-date information about agricultural practices that will enable them to improve the safety of their products. Local and direct market growers need to be able to demonstrate to their consumers that they are knowledgeable about and have implemented such practices. Larger scale growers with an interest in wholesale marketing of their farm products require information about food safety standards and food safety certification programs that are increasingly being required by wholesale buyers.

This project organized a series of on-farm and classroom food safety workshops designed to address the needs and interests of the above growers. Each workshop included one or more of the following activities: 1) information about good agricultural practices associated with the safe production, handling and marketing of fresh vegetables; (2) opportunities to learn about USDA GAPs program standards and requirements; 3) opportunities for growers to draft food safety plans for their farms; and 4) opportunities for growers to share with one another their experiences and recommendations in implementing improved food safety practices.

Attention to good practices bearing on safe production, handling and marketing of fresh fruits and vegetables is of increasing importance to consumers, wholesale buyers and government regulators. A growing number of wholesale buyers are requiring vegetable producers with whom they do business to certify that they meet USDA-GAP standards for the production and handling of one or more crops. Consumers are increasingly aware of and concerned about the safety of the foods they purchase in local markets and retail outlets. As a result, producers' success in protecting and expanding their markets, both direct markets and wholesale markets, will increasingly depend upon demonstrated adherence to well-established food safety practices and protocols.

Earlier SCBG funding enabled us to organize and host two on-farm workshops that discussed and demonstrated food safety-related practices that had been adopted by farmer-hosts. One workshop was targeted to direct-market operations with attention given to farmer-initiated practices to improve the safety of produce grown and marketed directly to consumers on the farm. A second workshop, led by the farmer-host, highlighted one farm's efforts in gaining USDA GAP Certification for produce marketed through wholesale channels.

Another SCBG project complimented the above by offering two full-day, classroom workshops for commercial growers that presented in-depth information about USDA GAPs and provided growers with opportunities to evaluate food safety practices on their farms and identify improvements in compliance with GAPs.

The present project was designed to address the needs of diverse growers that were identified in earlier projects, and to provide expanded opportunities for participants to learn about and consider feasible improvements of practices on their farms.

PROJECT APPROACH

Four food safety workshops for commercial growers were developed and offered, as follows:

On-Farm Workshops

In December, 2011, two day-long workshops were held for vegetable and small fruit growers who market directly and locally. The workshops, *Protecting Your Farm's Markets and Profitability: Writing a Practical Food Safety Plan for Small and Diversified Farms*, were designed for farmers not intending to become USDA GAP certified in the near future but who wanted a better understanding of how to identify potential food safety risks and what practical and affordable steps they could take to address them on their farms. In the morning session of each workshop, specifics of how contamination can happen on small farms were presented and discussed. Attendees identified aspects of their operations that warranted attention. The afternoon session included a visit to a local host farm to observe and discuss its on-farm food safety practices, how they were implemented, and their impact on produce safety and farm management. Using laptop computers and a produce safety planning template, attendees created a two-page draft of an On-Farm Food Safety Plan for their farm and identified specific action steps to be taken. These plans were intended to be used by growers to implement amended practices on their farms and shared with interested retail customers, local and wholesale buyers. An example of a completed food safety template, which was distributed as an example to workshop participants, is included with this report as an attachment.

Food Safety Classroom Workshops : In February, 2012, two food safety-related workshops for commercial vegetable and small fruit growers were held as part of NOFA Vermont's Annual Winter Conference. These 75 minute workshops were organized as panel discussions. Workshops were described in the conference brochure as follows:

Workshop #1: Growing Veggies with Efficiency and Food Safety in Mind

More and more buyers are asking produce growers what they are doing in terms of food safety. This workshop, moderated by Ginger Nickerson, GAP Outreach Coordinator, will help you set up for food safety, which may save you time, money and hassle later. Carol Tashie and Dennis Duhaime from Radical Roots Farm will talk about their experiences setting up their 1.5 acre, diversified vegetable farm and writing a farm safety plan using UVM Extension's Practical Food Safety format. Megan Baxter, Production Manager for Cedar Circle Farmstand and Education Center, will share her process of creating a farm safety plan, and updating practices and infrastructure based on the USDA GAPs format. Come get resources and costs for layout, infrastructure, equipment, and best practices for farm efficiency and production of high quality, safe produce.

Workshop #2: Making Sense of Food Safety: Workable Options For Vermont Produce Growers

Increasing numbers of food borne illnesses associated with fresh produce, and pending federal regulations for produce have caused produce buyers to look for food safety assurances from their vendors. In this workshop, an insurance agent and buyers will speak about why they are looking for food safety assurance from their vendors, growers will talk about getting USDA GAPs certified, and participating in UVM Extension's Practical Food Safety Curriculum, and Ginger Nickerson of UVM Extension will introduce a potential third option: creating a VT-GAPs certification program designed specifically for small and diversified farmers.

The workshops were organized and presented by the UVM Extension Service, the Northeast Organic Farming Association of Vermont (NOFA Vermont) and involved a total of 11 growers and service providers either as workshop hosts or panelists. Planning and delivery of the workshops was highly collaborative. Phone discussions, in-person meetings and email communications involving project partners took place over a period of several months.

UVM Extension – workshop planning, materials development and instruction. Ginger Nickerson (UVM Extension Produce Safety Outreach Coordinator), Lynn Blevins (UVM Extension GAPs Program Assistant and epidemiologist), Hans Estrin (UVM Extension Local Foods Buying Program and Windham Farm and Food Network).

NOFA Vermont – project planning, workshop coordination, registration, project budget management. David Rogers, NOFA Policy Advisor, Barbara Richardson, NOFA Office Manager

GOALS AND OUTCOMES ACHIEVED

Expected outcomes are both near and long term. Growers who attended the workshops learned of improved practices that they could implement on their farms. Attendees at the on-farm workshops indicated their intention to do so. However, the project was not designed to conduct follow up visits or surveys to measure levels of actual implementation.

The attendance target for each on-farm workshop was 15 growers. Actual attendance was:

December 7 - 16 growers; December 8-9 growers and 1 service provider.

The major outcome goals of the on-farm workshops were (1) to provide growers with reliable and current information about on-farm food safety-related risks, (2) to enable them to identify specific changes in practices on their farms to better address those risks on their farms, and (3) to develop On-Farm Food Safety Plans that would guide implementation of these changes on their farms.

Evaluations were completed by attendees at the conclusion of each workshop. These evaluations were intended to assess the degree to which these goals were met.

- 17/20 (85%) of participants indicated an "increase in their knowledge of hygiene and sanitation practices to address food safety risks". On a 5-point scale, the average self-rated

"before" score was a 3. On the same 5-point scale, the average self-rated "after" score was 4.5, an increase, on average of 1.5 points.

- 100% of participants agreed or strongly agreed that the information was well presented and understandable in both the morning sessions and the farm tours.
- 100% of participants agreed or strongly agreed that the information will be valuable on the farm or in work with growers for both the morning sessions and the farm tours.
- Of the 18 people who answered question 8, "Do you plan to make any changes to address food safety risks," the following changes were specified, with the number following the change indicates the frequency that change appeared:
 - Addition and/ or changes to wash stations (hand or produce) (5)
 - Washing produce (triple wash, spin dry, adding sanitizer) (3)
 - Record keeping (3) including for composting (1)
 - Washing / handling of harvest containers (2)
 - Changes to packing shed (2)
 - Better signs (2)
 - Harvest procedures including cooling (2)
 - Hygiene and sanitation (unspecified) (2)
 - Farm SOP / plan (1)
 - Labels (1)
 - Disinfecting work areas (1)
 - Researching prior land use (1)
 - Compost management (1)

Attendees indicated that they "liked" using the farm plan template, talking with other growers, the workshop's friendly and enthusiastic atmosphere, the opportunity to write their farm plan and the farm tours.

Attendees' evaluations included several recommendations to improve future workshops, including providing a more extensive list of relevant web-based resources and more time for group discussion of attendees' own farms and food safety-related issues.

Classroom Workshop 1 was attended by 33 people, including 25 growers. Attendees were asked to rate the quality of the workshop (1= lowest; 10=highest). 12 attendees responded: 9 rated the quality as 9-10; 3 rated the quality as 7-8. Two attendee comments were received:

"Thank you!! This presentation helped me realize what harvesting and storage practices my farm is a bit lacking in and I will be rectifying them this upcoming season. I also think your willingness to share your farm safety plans is admirable and helps many of us to have a starting point"

"Megan was excellent! Radical Roots was good but too basic for my needs. Overall, a good combination."

Classroom Workshop 2 was attended by 12 growers. Attendees were asked to rate the quality of the workshop (1= lowest; 10=highest). 5 attendees responded: 1 rated the quality as 9-10; 3 rated

the quality as 7-8; 1 rated the quality as 5-6. One comment was received: “Helpful workshop for those of us considering options”

As described above, the content of the workshops closely match the stated goals and purposes of the project. Workshop attendance was satisfactory in all but one workshop and participants’ evaluations of workshop content and quality were uniformly positive.

BENEFICIARIES

Project workshops benefited a diverse group of commercial vegetable producers who chose to attend because they recognized the importance and relevance of the workshops’ content to the success of their business. The potential economic impact of this project was not quantified, however, the goals clearly bear on operations’ economic success and the growers who attended them recognized this.

LESSONS LEARNED

The conception and design of the workshops were sound. They clearly addressed the concerns and needs of attendees.

The workshops were well attended, except for *Making Sense of Food Safety: Workable Options For Vermont Produce Growers*. This was probably due to the fact that the workshop was offered at the NOFA Winter Conference, where most farmer attendees operate direct-market operations and are not required to obtain GAPs certification or other third-party food safety certification.

Evaluation forms for the two classroom workshops were not made available to participants at the conclusion of these workshops. Evaluations were completed electronically at a different location and later time during the conference. This reduced the number of evaluation forms that were completed. In retrospect, evaluations should have been distributed and completed at the workshops.

CONTACT PERSON

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PROJECT 12: Local Purchasing Best Practices – Previously Accepted

PROJECT SUMMARY

Many schools in Vermont are trying to determine the best methods for integrating local purchasing of fresh foods in their school food program and nutrition education into their curriculum. VT Food Education Every Day (VT FEED), a statewide farm to school project of 3 non-profits (Northeast

Organic Farming Association of VT, Food Works, and Shelburne Farms) completed a research project in December 2010 funded by the Center for Disease Control. It evaluated changes in youth eating behavior, particularly the consumption of fruits and vegetables, as an outcome of farm to school programming. To share that timely information and to support the growing Farm to School (FTS) movement, VT FEED conducted a series of regional workshops, with regional FTS partners, to share the best practices for building local purchasing relationships and introducing fresh, whole foods to students. This was accomplished through demonstrations and presentations of taste-tests of vegetable dishes, preparing seasonal recipes, nutrition education, and integrating local food and farms into the curriculum and cafeteria.

PROJECT APPROACH

A wide variety of local fruits and vegetables are produced on small farms in VT and are the perfect match with farm to school programs. Introducing local produce to students is a lower cost option than dairy and meat, and yet opens students up to many new tastes and varieties. To really address the challenge that schools face purchasing and serving local produce, we intentionally conducted 4 regional workshops during the school year when very little produce was grown, but much was available in storage. We targeted the counties that regional partners and the VT Agency of Agriculture Food and Markets (VAAFMM), who administers the VT Farm to School Grant program, identified as needing assistance with various levels of FTS programming. VT FEED and these aforementioned partners also address programming from a 3 C's model: integrating school food change in the Classroom, Cafeteria, and Community. We believe that for real school food culture to change to a more local food system, these components must be part of any farm to school program.

The 4 workshops highlighted seasonal specialty crops in a variety of ways. At each workshop we purchased fruits and vegetables, procured from those regions, and used them in recipes we prepared and shared during the workshops to demonstrate what was available. One participant shared, *"Cooking together was an effective ice breaker - and sharing the food a delicious closure."* In addition, we encouraged farmers and food service from each region to attend, by providing a stipend for their attendance.

VT FEED has been operating for 12 years throughout the state. However, we realized in order to make the most connections and to support people beyond the workshops, we needed to partner with regional FTS programs to develop and conduct the workshops. With their regional contacts with farmers and schools, and abilities to identify appropriate sites and workshop presenters, the workshops were better attended, and were most relevant to the people in the region. In addition, the regional partners could offer continued support in their regions as people implemented their new ideas.

GOALS AND OUTCOMES ACHIEVED

Proposed: The goals and outcomes originally stated in the SCBG application:

4 regional workshops will be held. 60 individuals will participate in each workshop from 25 schools, reaching a total of 240 participants and 100 schools.

Outcomes achieved: 4 workshops were held and each workshop had between 30-100 people attending reaching 250 people total. Of those participants, 30 schools were represented. This number was lower because we had teams of people attending from many of the schools.

With our partners, we developed and met the following goals and outcomes of the workshops:

Goals for 4 regional workshops:

- Brought together Farm to School participants and interested parties from the regions to learn about the emerging programs and initiatives in the region
- Showcased and shared best and promising practices in FTS programming
- Provided guidance to overcome challenges such as funding and program sustainability
- Promoted the “3 C’s” model of Farm to School: school food system change through the Classroom, Cafeteria, and Community
- Increased the consumption of specialty crops by children in Vermont schools by modeling use of seasonal local fruits and vegetables and sharing best practices among school food service providers and other community partners.

Outcomes for 4 regional workshops:

- Participants made at least two connections with people in their regions who can help them develop or advance their Farm to School programs.
- Participants utilized information and resources gathered from the workshop to impact their Farm to School programming.

Listed below are some of the workshop session descriptions developed for each of the 4 regional workshops:

- **Farm to School in the Cafeteria**—building the school food program local purchasing relationships. Many schools in Vermont are trying to figure out how to consistently purchase local foods and create a sustainable school food program. In this workshop, we will touch on the complexity of the school food environment, best practices for increasing participation, and share several systems of sustainable local food purchasing.
- **Marketing Farm to School**—Capture your Farm to School story through art, photography and writing as well as how to communicate it to your community, students and supporters. Hear the Hartland Farm to School Salsa story and walk away with the tools you need to spread the word of Farm to School.
- **Farm to School in the Elementary School Classroom**—This interactive workshop will feature exciting ways Farm to School can be integrated into the classroom and across the disciplines. Presenters will engage participants in a hands-on activity while also sharing how FTS programs and ecological education is reconnecting students with their local and community food systems across Vermont.

- **Farmer-Classroom Connections**—This session will focus on how to create connections between schools and farms. We'll discuss what to keep in mind when developing a farm based field trip and how to bridge the "farm" and "school" environments. How can farmers benefit from having students visit their farms? We'll also discuss how farmers are connecting with students through classroom visits and becoming pen pals.

Farmers, food service, teachers, parents, and other community members responded positively to the workshop format: cooking dishes with local foods, workshops on food, farm, nutrition curriculum development, composting, gardening, how to incorporate local fruits and vegetables, where to buy them, budgeting, marketing local foods, community involvement in the school food environment.

Workshop evaluations indicated that 60-65% of respondents became more aware about the ways they can incorporate local fruits and vegetables into their menus. Here are some statements from the evaluations:

"Networking with schools at different stages in utilizing local foods met my needs."

"I made contacts and collected resources to do FTS."

"One idea I will implement will be to conduct more taste tests with students involved."

"I learned ways to get students to eat more local foods."

"The food miles activity was a great way to introduce local food concepts to nutrition education."

"I will teach my food service staff to make kale chips!"

One of the community members at a regional workshop stated on her evaluation, *"I was really surprised to see the large number of people involved. It makes me feel there really is lots and lots of support and resources to draw on."*

BENEFICIARIES

Participants in each region were encouraged, through a discounted workshop fee, to bring a team from their school. Farmers and school food service personnel were able to attend the workshops for free and were offered a \$50 stipend; realizing if they are not in the discussions, we were missing the producers and users of specialty crops!

Following are the regions and the FTS partners we worked with. In addition, the VAAFM was not only involved in identifying the regions of need, but were presenters at the workshops.

- Orange/Windsor/Windham Counties partnering with Upper Valley Farm to School:
 - 110 participants representing 25 schools
- Bennington/Rutland/Addison Counties partnering with Green Mountain College:
 - 68 participants representing 10 schools
- Franklin/Lamoille Counties partnering with Green Mountain Farm to School:
 - 30 participants representing 10 schools
- Orleans/Caledonia/Essex Counties partnering with Green Mountain Farm to School:

- 40 participants representing 15 schools

Evaluation forms were provided to every participant and about 40% were returned. The feedback, however, was very positive. Participants stated that they met people in their region who they could follow up with, and learned of regional and state resources that could help them.

One participant commented, *“The collaboration across the different groups involved (food service/teachers/parents/etc.) was inspiring and helpful!”*

LESSONS LEARNED

This grant was intended to cover only part of the costs of conducting the regional workshops. Although we originally thought a 3 day intensive workshop would be a good model, we learned that more robust, half-day regional workshops, with some basic Farm to School training opportunities, will better answer the need of VT schools and communities. In addition, we were able to reach more people because school teams and individuals could attend without traveling a great distance. As another participant commented, *“The diverse array of school staff and community members was important to showcase all points of view.”*

CONTACT INFORMATION

Abbie Nelson, director of Vermont Food Education Every Day (VT FEED), a collaborative project of Food Works, NOFA-VT and Shelburne Farms. abbie@nofavt.org, 802-434-4122

PROJECT 13: Low Income Specialty Crop Access – Final Report

PROJECT SUMMARY

The federal Supplemental Nutrition Assistance Program (SNAP) provides over \$12 million that is spent *per month* in benefits to low income Vermonters. This resource is challenging for local farmers to tap into because food stamp benefits are no longer issued as paper coupons, but rather on electronic benefits transfer (EBT) debit cards that require expensive technology. Increasing food stamp purchases at farmers' markets allows small farmers to capture more of those federal resources and food stamp recipients also benefit by being able to purchase locally grown fruits and vegetables with their benefits.

The purpose of the project was to provide a stipend for staffing and promotion of specialty crops for food stamp recipients at 15 farmers markets that have EBT machines. This funding helped us leverage funds from the Farmers' Market Promotion Program, allowing us to provide stipends to all markets that received EBT machines through the NOFA-VT EBT grant program.

PROJECT APPROACH

NOFA-VT, along with the partners of our EBT Working Group (Vermont Agency of Agriculture, Vermont Department for Children and Families, UVM Extension, and Hunger Free Vermont), have helped a total of 38 farmers markets with 41 locations in Vermont (approximately half of markets) to acquire wireless EBT card readers, machines that work at farmers markets in Vermont. The focus of this project was to promote the use of EBT machines among low-income Vermonters by staffing a table at each market where EBT holders can use their card to purchase products at the market.

We were able to fund stipends at 16 markets. We worked with each market to develop a staffing and promotion plan to reach members of their community who are not being reached by the market and supported an EBT coordinator at each market to staff an EBT table and promote consumption of fresh fruits and vegetables. Markets generally found these stipends incredibly useful for getting their program up and running. As they were weaned off the stipends, markets also have acknowledged the challenge of funding this EBT program. We are currently working with the Agency of Agriculture on a feasibility study about EBT technology and the potential for a universal alternative currency to lower the financial and administrative burden on farmers' markets.

Whereas the majority of products sold and purchased at farmers markets in Vermont are fresh fruits and vegetables, we cannot guarantee that EBT customers are purchasing specialty crops, nor that EBT coordinators are solely enhancing the competitiveness of specialty crops. Based on EBT customer surveys conducted as part of an FMPP grant we received, we estimate that 80% of the purchases made by EBT customers are fresh fruits and vegetables, and we allocate 20% of non-SCBG funds to cover the percentage of non-specialty crop vendors who benefit from EBT staffing at farmers' markets. We received matching funds from the Farmers' Market Promotion Program to contribute to the staffing stipends of EBT coordinators at participating farmers markets.

GOALS AND OUTCOMES ACHIEVED

Our expected Measurable Outcomes were:

1. Increased income for participating farmers' markets from EBT transactions, and
2. Increased consumption of fresh fruits and vegetables by low-income adults and children.

We proposed to measure our outcomes by gathering gross income from EBT sales, and recording the number of EBT transactions, as follows:

<u>Year</u>	<u># of Transactions</u>	<u>Total EBT dollars spent at participating markets</u>
2011	2,722	\$63,385
2012	3,152	\$64,554

There was a 15.8% increase in the number of transactions from 2011-2012; EBT transactions, and accompanying sales, are growing, but growing slowly. In 2011, and 2012 our 5th and 6th years respectively of bringing on new EBT markets, we brought on smaller, rural markets with much

lower transaction potential. Therefore, it is reasonable that the increase in transactions will slowly grow.

A 2012 survey of 76 EBT customers at participating Vermont farmers' markets shows the effect on customer purchases of fruits and vegetables:

Table 1: What does using EBT benefits at farmers markets allows shoppers to do?

Response	Number of Responses	Valid Percent
Shop at the farmers market more often	60	81%
Spend more money at the farmers market	57	77%
Save money	54	73%
Increase the amount of local food I buy	57	77%
Increase the amount of local food my children eat	30	41%
Other	4	5%
Total	262	

NOTE: Respondents could pick more than 1 option. Total percent can add up to more than 100%

Table 2: As a result of shopping at the farmers market this season, it is easier for me to buy fresh fruits and vegetables.

Ranking	Number of responses	% valid responses
Strongly agree	56	84
Agree	9	14
Neither agree nor disagree	1	2
Disagree	0	0
Strongly disagree	0	0

Table 3: During the season when the farmers market is open, what amount of your fresh fruit and vegetables do you estimate you buy from this market?

Ranking	Number of responses	% valid responses
None	1	2
Some	9	14
About half (50%)	24	36
Most	25	38

Almost all or all	7	10
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Table 4: As a result of shopping at the farmers market this season, the amount and variety (or different kids) of fresh fruits and vegetables I have eaten has

Ranking	AMOUNT OF FFV		VARIETY OF FFV	
	Number of responses	% valid responses	Number of responses	% valid responses
Increased greatly	32	49	28	49
Increased some	23	35	25	44
Stayed the same	9	14	4	7
Decreased some	1	2	0	0
Decreased greatly	0	0	0	0

BENEFICIARIES

Beneficiaries include the growers at the 16 markets served, as well as the consumers who attend these markets. Of the 16 markets supported in this project, we estimate that there were a total of 307 specialty crop producers who benefitted. This is an estimate, in part, because the number of vendors changed, per market, and over the course of the season.

LESSONS LEARNED

- Funding EBT presents a significant challenge for many of Vermont's small, rural markets, and may need continued outside support.
- Collecting data from markets is also very challenging. Many do not have the staffing necessary to provide reports on sales data.
- There are many barriers to shopping at farmers' markets including price perceptions, social stigma, and lack of awareness around the growing availability of EBT at markets. Because of this, we have identified the need for a strategic statewide promotions campaign to raise awareness and break down barriers. To this end, we received funding from sources such as The Farmers' Market Promotion Program (FMPP) to support a statewide promotions campaign. Moving forward, we hope to continue to see an increase now that these programs are more established and with the increase in statewide promotions that we did (ie. radio ads, professional posters distributed to all EBT markets, increased Harvest Health Coupons).

CONTACT PERSON

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PROJECT 14: Vineyard Site Suitability – Final Report

PROJECT SUMMARY

Grape growing is a relatively new effort on behalf of Vermont farmers. Unlike corn, soybeans, grains, and pasture, successful grape growing depends on the quality of the site on which they are grown. In a developed wine region, vineyard sites are purposefully selected and only on the best sites are grapes planted. However, in a developing region like Vermont, grapes are often planted on land that is currently owned or available, regardless of whether or not the site is ideally suited for grape growing. The idea of the mapping project was to address this issue and transition farmers into more sustainable vineyard development. This project facilitated the development of *site selection criteria* and *methodology* to determine the suitability of sites throughout the state for new grape plantings, and to provide detailed mapping of Vermont regions with potential for efficient vine growing. Historically, there was no information of this sort available for existing or potential producers. Over the past several years, Vermont has seen a surge in small vineyard establishment, so it is increasingly important that tools like this are available to ensure the success of our nascent industry. The result of this project (available online) will enable current and prospective grape growers to identify suitable vineyard sites in Vermont through the application of *geographic information systems* (GIS) technologies.

Project Approach

The project was divided into 4 phases. It began in early December 2010 and ended in early June 2012. The funding for this project was used to contract the University of Vermont's Spatial Analysis Laboratory to develop an interactive geographic information system (GIS) map of VT that users can utilize to assess potential vineyard sites throughout the state. The Vermont Grape and Wine Council (VGWC) hired the lab and together, through various meetings, came up with a set of parameters important to grape growing that the map would include. Parameters were determined based on the literature available regarding grape growing. A similar mapping project was created by the state of New York, and that work was also referenced. These factors, which ended up as data layers in the map, included slope, aspect, growing degree days, growing season length, percent winters below -15F, soil texture, soil drainage, soil depth, and soil pH. Data acquisition and preparation of data was contracted to UVM, who in turn worked closely with the Northeast Climate Data Center to acquire these data. The following is some insight to that process, as described by Ernie Buford of the Spatial Analysis Lab:

"I had hoped to use [Northeast Climate Data Center's] algorithm to interpolate weather station data myself, but they weren't in a position to provide what I needed to do so. NECDC does these interpolations themselves, and I acquired a few of their interpolated point data sets that I then used to create raster surfaces. The climate variables we got in the end were a little bit of a compromise because the New York climate is a tad warmer than Vermont's, and NECDC did not have data for lower temperature thresholds. Both the soil and the climate data took a little more work than we expected just to acquire them. Soil data are not quite complete for Vermont, as you have probably noticed.

The OpenLayers javascript library was a little bit challenging in certain respects, but I think we achieved most of what we had hoped to do in terms of web map functionality.”

The deliverable at the conclusion of this grant was two-fold. Firstly, a user friendly GIS map of VT tailored with specific parameters related to grape growing was created. Users are able to access the map online for free and from anywhere to assess the potential for grape growing at a specific site of interest or to simply manipulate the various data layers in attempt to locate a favorable site. Secondly, a brief presentation of the project and resulting map was delivered at the Council’s annual meeting. There were about twenty-five people in attendance.

GOALS AND OUTCOMES ACHIEVED

The current theme in establishing a VT vineyard is to plant on land that one already owns. From a financial standpoint this seems reasonable; however, the long-term sustainability of a vineyard is directly related to the environmental conditions present. The ideal situation is for future and existing grape growers to purposefully seek out prime vineyard locations, those that meet the criteria for a successful vineyard and have the requisite micro and macro climates to ensure vineyard success. The creation of the VT Vineyard Site Suitability GIS map has begun to change the way in which future vineyards are sited. To date, at least two commercial vineyards, Shelburne Vineyard and East Shore Vineyard, have utilized the map to determine the suitability of their most recent plantings. It is the goal of the council to ensure other commercial vineyards also consult the map before putting vines in the ground.

The goal of the web mapping application is to provide a simple means for current and potential grape producers to visually examine topographic, climatic, and soil characteristics that can play a role in determining suitability of sites for new grape plantings. The web map can also guide efforts to identify and delineate desirable vineyard sites. Site visits will still be a requirement for final decisions. While we do not have a count of website hits as the link is not ‘live’ yet, we believe through the number inquiries of various members that the information has produced the interest we expected it would generate. We plan to track the number of hits through the efforts generated as a result of this grant when the GIS link, goes ‘live’ on the Council’s newly redesign website late in the spring of 2013, making it more publically accessible. Still, the Council has actively promoted the upcoming GIS map and new planting of cold climate varietals through various outside events over the past year.

Despite various points within our approved project not being achieved (live link, subsequent data collection and Agriview distribution), there have been five new vineyards that came on line in the last 18 months. We have begun to study the various soils content throughout Vermont to determine additional areas suitable for planting. The best available data sets are incorporated into the mapping interface which allows clients to view each at reasonable scales for arbitrary sites within Vermont. Ultimate interactivity, user friendliness, map features are limited by funds, as GIS is specialized work with high funding demands. The more dollars spent the better results you garner. Development of a rating system for environmental factors would have been favorable but it was beyond the scope of the project.

To date, it is difficult to estimate how this tool is affecting the grape industry in Vermont. This project was only completed in 2012 and it is common practice to perform site preparations for 2 years before planting a vineyard. Therefore, the Council would not necessarily be aware of any new plantings that have utilized this map until spring of 2014. It is common for new members to wait until they have established vineyards before officially joining the Council. However, when the Council holds a meeting or workshop related to grape growing, attendees are made aware of the site suitability map. It is the Council's hope that this project positively contributes to the success of Vermont viticulture.

BENEFICIARIES

The beneficiaries of the grant are:

1. Existing Vermont vineyards and those contemplating starting vineyards in Vermont. These members benefit from unlimited access to a powerful mapping tool that can assist in identifying high potential grape growing sites. Members are able to select various parameters important to grape growing and subsequently make more informed decisions on potential vineyard sites. Existing vineyards can be evaluated. New growers benefit directly by being able to pinpoint ideal vineyard sites. However, site visits are still necessary and even though a location may look ideal on the map, the land may not be available or there may be site specific issues that the map is not detailed enough to illustrate. The real benefit of this map is having another tool in the box that can lead to more intelligent vineyard establishment.
2. Existing fruit and vegetable growers and those contemplating ag production. Similarly, these members are able to use the interactive map to select and evaluate existing and potential growing sites.

The officers and members of the Vermont Grape & Wine Council are extremely grateful for the support of this grant, which has enabled the Council to create a key tool for this small but growing agriculture-based industry. Unlike other industries where there are at least one or two large companies that can help to support association efforts, all of our members are small businesses, and many are in start-up mode.

LESSONS LEARNED

The project, in and of itself, was indeed a success. UVM made a great partner in the project, and this resource for future viticulturists is invaluable. The remaining challenge is recruiting new growers (who will be able to use the map) to the industry. Towards that end, the VGWC is now working with another UVM researcher to build financial and practical models for vineyards in Vermont. We will use the map in developing the models for farm viability, and will include it in the toolbox presented to interested growers.

CONTACT INFORMATION

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Ethan Joseph, Treasurer, Vermont Grape & Wine Council, ethjoseph@gmail.com

ADDITIONAL INFORMATION

* Webmap deliverable - <http://www.uvm.edu/~ebuford/VGWC/>

PROJECT 15: Wine Industry Education and Marketing Support – Final Report

PROJECT SUMMARY

As a relatively new wine producing region, Vermont vintners and fruit producers have quickly developed their marketing skills to attract new customers. The Council supports the marketing of Vermont made wines through its website, festival participation and other programs that benefit the industry as a whole.

This grant follows earlier funding from Specialty Crop Block Grants, most recently 02200-SCBGP23. For this grant, we are focusing resources on the continued activities that Council members believe were most valuable among those supported by previous grants. This three pronged focus includes continuing the annual educational conference, enhancing our website functionality and key direct-marketing campaigns.

PROJECT APPROACH

The following activities were performed in 2011-2012 with support of grant funds:

Educational Activities:

- The Council put on an Annual Conference in both June of 2011 and 2012 with educational seminars for grape growers and winemakers. We saw an attendance increase of 43% in 2012.
- In the spring of 2012, a vineyard pruning and training workshop was held in a local VT vineyard. Of the 12 attendees, 60% were members, and 40% were new/potential growers.
- An inaugural wine faults workshop was held in June of 2012. The workshop quickly sold out. Final attendance exceeded the workshop maximum of 25 due to demand. 100% of the surveys were returned with outstanding feedback and the request to hold the workshop as an annual event.
- Experts in vineyard techniques and winemaking practices were engaged to for both the conferences and the workshops. All were overwhelming well received.

Direct-market, Print Materials/Passport Campaign:

- The VGWC Passport program continued its early success requiring a second printing of 5,000 more passports in the late summer of 2012. The Passport provides a map and listing of all the participating wineries in Vermont. The program requires consumers to visit at least 10 wineries and present their Passports to be 'stamped' during the visit. Consumers who collected 10 or more 'stamps' could then submit it at the end of 2012 to be part of a drawing for prizes provided by participating Council members. Again, the program was highly regarded by all that

participated in 2012 and consumers were consistently surprised at the number of wineries that were in Vermont. The greatest impact of the program was increased foot traffic into the wineries. The overall value is that the program has adjusted every year based on participant feedback, making it more of a useable marketing tool industry wide. A redesign to allow for more wineries and information is planned for 2013.

- The final products developed by Wendy Knight of Knight and Day Communications (PR strategy, press kit) garnered continued contact with the local and regional media. Her targeted promotion of Council events (annual Open House Weekends, Council sponsored Festivals) as well as overall promotion of Vermont Wines through member events (Wine & Chocolates Weekend) via press releases and crafting of both TV/radio advertising allowed vineyards and wineries greater exposure thus increased traffic and sales.

Website Enhancements:

- Minor enhancements were made to the Council website. We continue to see increased traffic to the website; specifically, there are increased, year over year, measurable hits during promoted events.

GOALS AND OUTCOMES ACHIEVED

Goal - Education of members to continuously improve the quality of their products:

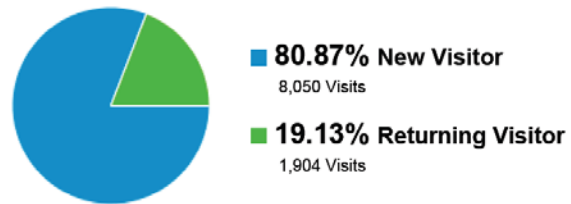
Measurement:

- Increased year over year annual conference attendance – 46 attendees in 2012 and 32 in 2011
- Broadening of the annual conference to a two-day event
- Completion of statewide GIS mapping to assist new and current producers
- *Local* onsite training for growers – 12 participants

Goal – Marketing - introducing consumers to the new types of wines made in Vermont

Measurements:

- Wineries continue to see an uptick of consumers arriving with Passport in hand – approximately 10% of customers in 2012. 128 Passports were collected in 2011 and 129 in 2012
- Over 5000 Passports were handed out in 2012
- Collectively, the participating members attend close to 40 local/statewide festivals, fairs, farmer's markets and private events.
- The annual website hits at the start of the grant in 2009 were 4,206 vs. the considerable increase of 9,954 in 2012. While the website hits had a negligible decrease from 2011 to 2012, the year over year event hits were overall increased. Below is some information from Google Analytics:

8,173 people visited this site

- The Council continues to sponsor and participate in high profile festival events that celebrate Vermont foods and wines.
 - These included the 2011 and 2012 Vermont Cheesemakers Festival in July, which sold out of their 1750 tickets, 1318 of which included wine tasting. There was also a 40 seat wine seminar at the festival again this year.
 - 2012 Vermont Life Wine & Harvest Festival in September. A nod to the growing interest and demand for Vermont wines ... the 2012 day one attendance for this years festival exceeded that of the two day total of the 2010 LW&H Festival (the 2011 festival was cancelled due to Irene), causing numerous wineries to return home to replenish their on-site stock to fulfill the next day's anticipated crowds.
 - 2011 Lake Champlain Maritime Festival in August
- The VGWC continues to have booths at festivals which encourage the sharing of our ever-popular Passport/Rack cards and again, invites ad-hoc opportunities to educate and inform the consumer of our award winning wines.
- Open House Vineyard & Winery Weekends were held in both August of 2011 and August of 2012. Participants noted an awareness and attendance has increased a healthy 12% year to year.
- Press members attend all of the major festivals and events. As the awareness of our award winning wines widens, articles continue to be written in major local and regional media publications.

BENEFICIARIES

The beneficiaries of the grant are 55 members of the VGWC:

1. Existing Vermont vineyards and those contemplating starting vineyards in Vermont. These members benefit from the expanding annual educational conference and local hands on workshops that cover a myriad of topics from grape growing and to wine making.

These members also benefit indirectly from the marketing programs that support the growth and commercial success of wineries who are the buyers for their grapes.

2. Existing Vermont wineries and new start-up wineries. These members benefit from the annual education conference which covers topics in winemaking and marketing including sanitation practices, sulfite use, acidity measurement and management, tasting room best practices, and distribution issues. These members also benefit directly from the Council marketing programs that are funded by this grant.

The officers and members of the Vermont Grape & Wine Council are extremely grateful for the support of this grant, which has enabled the Council to execute key programs for this small but growing agriculture-based industry. Unlike other industries where there are at least one or two large companies that can help to support association efforts, all of our members are small businesses and many are in start-up mode.

LESSONS LEARNED

Key insights – Positive results:

- The Passport program continues to be a huge success. A full redesign is anticipated in 2013 to accommodate the growing number of wineries participating and the minor tweaks received from our consumers. We continue to receive email via the Council website raving about the Passport.
- The annual conference is highly valued by members. With member feedback and expanding attendance, the shift to a two-day event was very well received. As Vermont's grape growing and wine making industry increases, the quality of the viticulture experts we draw continues to grow with that delta.
- The website is an important source of traffic to members' individual winery websites. We are striving to improve our content, measurements and ease of use.

Key insights – Areas for improvement or change:

- The Vermont Cheesemakers Festival and the Vermont Life Wine & Harvest Festival continue to be two major events worth Council support. As demand for Vermont wines expands, the need for an industry wide festival keeps bubbling to the top of every discussion. Our all-volunteer member status remains a mild stumbling block for expanding the Council to the next step. We will continue to be judicious going forward and focus resources on Council support of those projects and events that will be a constant in building awareness of Vermont wines with consumers, support sales of winery participants and expand our 'Vermont grown' grapes.

CONTACT PERSON

Christine Makris, President, 917-497-4519, ckmmck@gmail.com.

ADDITIONAL INFORMATION

See <http://vermontgrapeandwinecouncil.com/>

PROJECT 16: Vermont Harvest Publication – Previously Accepted

PROJECT SUMMARY

The 2011 *Vermont Harvest* publication focused on promoting Vermont's specialty crops direct-to-consumers. The activity was sponsored by four of Vermont's top specialty crop producer organizations-- the Vermont Grape & Wine Council, the Vermont Maple Foundation, the Vermont Vegetable & Berry Growers Association and the Vermont Tree Fruit Growers Association (VTFGA) - -- with the latter organization serving as the activity lead. The publication included directories of Vermont orchards, farmstands and farmers' markets and other useful information for consumers, including recipes using Vermont specialty crop products and material on the state's apiary industry.

Direct-to-consumer sales are important to many of Vermont's specialty crop producers, since the process allows farmers to retain a higher portion of the consumer's dollar than with selling through wholesale channels. *Vermont Harvest* was created by the Vermont Agency of Agriculture a decade ago as a means of increasing important direct-to-consumer sales for Vermont food and agricultural based businesses. The Agency found that distribution of the publication as a freestanding insert (FSI) in major Vermont newspapers circumvented problems with dissemination of separate brochures for individual producer organizations.

PROJECT APPROACH

Partner organizations communicated via telephone and e-mail to discuss the process for publishing and distributing the 2011 publication. Partner organizations were allocated space and broad discretion for selecting articles, photography, recipes and other content. As the lead on the activity, VTFGA contracted with organizations for graphic design, printing and distribution of the publication. Drafts were presented to the Vermont Agency of Agriculture with sufficient lead-time for review and editing before printing and distribution. The Agency was also invited to submit an introductory article for page 2, as in previous issues.

GOALS AND OUTCOMES ACHIEVED

Surveys of the four partner organizations showed that 75 percent of members thought that *Vermont Harvest* remained helpful in promoting their businesses in 2011, while 25 percent of members saw no noticeable effect on their sales. Additional comments received through the survey (conducted via e-mail) included:

- Very attractive, informative guide. Promotes Vermont at its best.
- The Vermont maple syrup producers appreciate being part of the "2011 Vermont Harvest-Specialty Crops Edition". Opportunities like this provide an opportunity to educate consumers about how maple syrup is produced, the importance of maple syrup production in maintaining Vermont's woodlands, and how to cook and bake with an all-natural, healthy sweetener.

- This is an important and effective publication that works well in promoting our business and our industry in general.
- I didn't have anyone specifically mention that they found us using this publication. There were other, more effective forms of advertising that we used to draw business to our location.
- *Vermont Harvest* publication helps very much to support our efforts in promoting what we grow here in Vermont and would like to see this work continue.
- I believe the *Vermont Harvest* will be enhancing once I have my website up and running. This is a perfect way for people to find you.
- The link is the first that I saw the publication. It is very attractive and we would have offered it in our farmstand if we had known.
- I feel it is a beautiful and very worthwhile publication.
- I wholesale my entire crop, so the publication wasn't very helpful to my business.

Survey respondents were unable to track an increase in consumer recognition, or attribute any increase in sales to this publication.

A total of 50,000 copies of *Vermont Harvest* were printed and distributed, including 35,000 as an FSI in *Seven Days* and 15,000 through the Vermont Welcome Centers and State Information Centers. The publication was also posted on the Vermont Tree Fruit Growers Association website (www.vermontapples.org) and distributed to partner organizations, including the Agency, as a pdf file for posting on their respective websites.

BENEFICIARIES

Based on the November 2011 survey, publication and distribution of *Vermont Harvest* benefited an estimated 75 percent of specialty crop producer operations in Vermont, including apples, berries & grapes (636), vegetables (413), maple syrup (1,723) and honey (1,700) producing a total of over \$85 million in farm gate sales annually. Many of Vermont's specialty crop producers sell directly to consumers and through small wholesale venues, including restaurants and local cooperatives.

In a typical year, the anticipated 5 percent sales boost (\$4.2 million) provided by *Vermont Harvest* would have been met relatively easily. Unseasonably high rainfall in the spring, followed by the devastating effects of Tropical Storm Irene in late August, likely negated overall economic gains for farmers, but still were generally beneficial.

LESSONS LEARNED

Previous publications had been distributed to homes and businesses through numerous daily and weekly newspapers. Budget cuts at the state level compelled distribution through a free weekly Vermont publication, *Seven Days*, which although widely distributed throughout the state and appealing to younger audiences than the dailies, was not distributed to homes and businesses.

The Agency of Agriculture is now evaluating printed marketing and promotional material, and moving towards an online marketing tool, "*Dig-In Vermont*".

CONTACT

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ADDITIONAL INFORMATION

An electronic copy of the 2011 Vermont Harvest publication is available at www.vermontapples.org.