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The Specialty Crop Block Grant Program (SCBGP) is an important program for Oregon agriculture. With more than 220 agricultural commodities and greater than 60% of the agricultural farm gate value from specialty crops, specialty crop markets constitute a large portion of Oregon's economy. When taking into account the fact that majority of Oregon's 35,000 farms are small to medium sized, you begin to realize the complexity of Oregon agriculture. The SCBGP has been essential in supporting Oregon's diverse and complex agricultural economy.

In order to provide necessary support toward the specialty crop industry, Oregon Department of Agriculture (ODA) decided to continue the use of a portion of the funds to support a full time SCBGP Manager. The position is responsible for all aspects of Oregon's SCBGP, including:

> *Coordination:* Responsibility of the coordination of all grant agreements, proper training for successful project management for sub-recipients, tracking and compiling all reporting to USDA-AMS, documentation and communications, and grantee performance reporting and monitoring. Progress and financial reports submitted by the sub-grantees to ODA are one of the tools that SCBGP Manager uses to monitor the success of the implementation of the projects. Reports are used to ensure that work is completed within the required timeline, ensure that the funds are used only for activities covered by the approved project, and ensure that grant funds supplement rather than replace State funds.
>
> The SCBGP Manager develops and manages a system to track and analyze the data to be used for documentation of grant outcomes and accomplishments. The data is compiled into summary reports required by the USDA.
>
> The SCBGP Manager coordinates with representatives of Oregon's specialty crop industry to enhance the development of meaningful, coordinated, productive projects that yield a measurable marginal return to the bottom line of Oregon agriculture.
>
> *Outreach/Training:*
> SCBGP Manager conducted outreach and trainings for potential recipients interested in program regarding the criteria for development and implementation of effective grant projects. SCBGP Coordinator holds statewide training/listening sessions, with additional statewide travel on an as needed basis.

SCBGP Manager provided technical assistance to potential applicants (concept proposal phase), to those invited to submit applications (full grant proposal phase) and to those applicants approved by USDA sub-grantees. Trainings are held in the fall and winter and for those not able to attend, webinars of the trainings are held to inform applicants about the program, train applicants on how to apply, and train sub-grantees on the best practices for reporting. In addition the program Manager implemented the opportunity for one-on-one conference trainings to enhance a more opportune learning experience in grant writing development for the second phase of project proposal open competitive process, implementing this process has helped develop a more outcome driven program in Oregon.

ACTIVITIES PERFORMED

In Fall 2012 ODA initiated a stakeholder survey to align the Specialty Crop Block Grant Program priorities with stakeholder priorities, once this survey data was compiled in mid December 2012 Oregon Department of Agriculture SCBGP Coordinator worked with Agriculture Development and Marketing Staff to strategically align outreach activities to meet the newly identified priorities.

A Farm Bill extension was approved for fiscal year 2013 Oregon's available grant allocation at the time including a reduction due to sequestration was $1,489,930.75.

The schedule for the FY2013 SCBGP was as follows:

Dec 19 or 20	Discuss targeted outreach	ODA Marketing Team
Jan 11	FY2012 Kickoff conference call	Advisory Board
Jan 12	RFP (web, news release, Facebook, twitter, etc.)	
Jan 20, Jan 27	Webinar (OR Program/Concept proposal)	

Phase I – Concept Proposal		
Feb 27, 12pm	Concept proposals due	
Mar 5-15	Review concept proposals	Advisory board and ODA
Mar 21	Discuss external concept proposals	Advisory board and ODA
Apr 3	Director to make final decisions about invitations to submit grant proposals	ODA
April 3	Invite applicants to submit grant proposals	SCBGP Coordinator
Phase II – Grant Proposal		
April 7-30	Review external & internal budgets	SCBGP Coordinator
April 13, 10-11am	Webinar (Grant proposal)	SCBGP Coordinator
May 10	Grant proposals due	External and internal applicants

May 11-21	Review applications	ODA Technical team
May 31, 1:30pm	Director to make final selection decisions on external & internal applications	ODA
June 4	Present decisions to advisory board	ODA
Jun 7	Invite applicants into state plan	SCBGP Coordinator
Jun 7-July 8	Prep state plan	SCBGP Coordinator
July 9	Submit state plan	SCBGP Coordinator
Jul 10	State plan final due date	

The Farm Bill known as the Agricultural Act of 2014 was given final approval by Congress and was approved for 5 years allowing for Oregon and other states to begin to receive grant allocation based on specialty crop acres of production as well as farm gate value. Based on this Oregon's program saw an increase of close to $500,000 making the FY14 award including a reduction due to sequestration total $1,960,412.83.

The schedule for the FY2014 SCBGP was as follows:

Dec 12 or 13	Discuss targeted outreach	ODA Marketing Team
Jan 6	RFP (web, news release, Facebook, twitter, etc.)	
Jan 16/17	Webinar (OR Program/Concept proposal)	
February 6	Webinar Q&A Live Concept Proposal	

Phase I – Concept Proposal		
Feb 24, 12pm	Concept proposals due	
Mar 3-14	Review concept proposals	Advisory committee and ODA
Mar 27	Discuss concept proposals	Advisory committee and ODA
Apr 2	Director to make final decisions about invitations to submit grant proposals	ODA
April 11	Invite applicants to submit grant proposals	SCBGP Manager
Phase II – Grant Proposal		
April 11-30	Review external & internal budgets	SCBGP Manager
April 18, 10-11am	Webinar training posted (Grant proposal)	SCBGP Manager
April 25 – May 8	Full Gant proposal one-on-one training opportunities offered	SCBGP Manager
May 9	Grant proposals due	External and internal applicants
May 13-June 3	Review applications	ODA Technical team
June 10, 1:30pm	Director to make final selection decisions on external & internal applications	ODA
June 11	Present decisions to advisory board	ODA
June 16	Invite applicants into state plan	SCBGP Manager
Jun 16-July 8	Prep state plan	SCBGP Manager
July 8	Submit state plan	SCBGP Manager

Jul 9	State plan final due date	
November 11/12	Sub-recipient - Project implementation training	SCBGP Manager

Oregon SCBGP was awarded based on specialty crop acreage and farm gate value for FY15 award including a reduction due to sequestration total $1,825,127.02

The schedule for the FY2015 SCBGP was as follows:

November 12, 2014	Extensive training for the Advisory Committee and technical review team	SCBGP Manager
December	A series of priority outreach meetings were held	SCBGP Manager/ADMP Staff
Jan 2	RFP (web, news release, Facebook, twitter, etc.)	SCBGP Manager
Jan 5	Webinar (OR Program/Concept proposal)	SCBGP Manager
February 6	Webinar Q&A Live Concept Proposal	SCBGP Manager

Phase I – Concept Proposal		
Feb 24, 12pm	Concept proposals due	SCBGP Manager
Mar 3-24	Review concept proposals	Advisory committee and ODA
April 1	Discuss concept proposals	Advisory committee and ODA
Apr 7	Director to make final decisions about invitations to submit grant proposals	ODA
April 8	Invite applicants to submit grant proposals	SCBGP Manager
Phase II – Grant Proposal		
April 8-30	Review external & internal budgets	SCBGP Manager
April 25 – May 15	Full Gant proposal one-on-one training opportunities offered	SCBGP Manager
May 22	Grant proposals due	External and internal applicants
May 13-June 5	Review applications	ODA Technical team
June 8, 1:30pm	Director to make final selection decisions on external & internal applications	ODA
June 10	Present decisions to advisory board	ODA
June 15	Invite applicants into state plan	SCBGP Manager
Jun 15-July 3	Prep state plan	SCBGP Manager
July 6	Submit state plan	SCBGP Manager
Jul 6	State plan final due date	SCBGP Manager
November 9/10	Sub-recipient - Project implementation training	SCBGP Manager

During the fall and winter of each year, outreach was conducted through key one-on-one meetings, site visits, by attending and speaking at key conferences, and encouraging a consultative approach with the Agricultural Development and Marketing Program area.

Based on the feedback from the advisory committee, the SCBGP Manager did not conduct statewide presentations, and instead focused on more targeted outreach. This outreach was shown with stronger outcome driven proposals with stronger industry development and more involvement from Oregon's industry groups such as the Commodity Commissions and representative industry partner organizations. The Advisory Committee found budgets to be stronger however indicate that a focus on outreach in rural communities continues to be needed. Additionally focused training to help develop the skills of project development to help potential applicants clearly define the intent of their projects is essential, ODA has made this a key priority for it's program and has added the one-on-one training component of the SCBGP.

In November 2014 the SCBGP Manager convened the advisory committee along with the ODA technical review team for an in-depth training of the new guidelines and restrictions as a component of the passage of the Farm Bill (Agricultural Act of 2014). Part of the discussion was a reminder of the reminder of the of the priorities as outlined within the previous industry survey and an opportunity was opened for the Advisory Committee to discuss any changes to the priorities at this time the committee chose refresh language to reflect more closely the newly authorized Farm Bill as well as add a focused rural development priority as outlined below:

Market development and access

- International
    - Understanding and addressing trade barriers or regulatory constraints in foreign markets (e.g. tariffs, TRQs, FTAs, quotas, bilateral agreements)
    - Obtaining market information and providing product exposure through trade shows, conferences, seminars, market research, consumer testing, in-bound and outbound trade missions
    - Applying new technologies to help identify new customers and facilitate shipments (e.g. packaging configurations, customer data, logistics, and transportation enhancements)
- Local and farm-direct, regional, and domestic markets
    - Obtaining market information and providing product exposure through trade shows, conferences, seminars, market research, consumer testing, and trade missions
    - Connect farmers to consumers by enhancing direct marketing opportunities that highlight production practices, farmers, and growing locations
    - Support the development and advancement of co-operatives to leverage grower and producer efforts
    - Develop and enhance economic opportunities in local communities that increase the awareness and consumption of specialty crops
    - Increasing child and adult nutrition knowledge and consumption of specialty crops by expanding access at schools, at work, and in local neighborhoods

Certification programs

- Assisting all entities in the specialty crop distribution chain in developing certification programs that enhance market access and increase sales by addressing food safety, sustainability, or other outcomes, including, but not limited to:
- Good Agricultural Practices (GAP), Good Handling Practices (GHP), Good Manufacturing Practices (GMP), identity preserved, sustainability, Global Food Safety Initiative (GFSI), Maximum Residue Levels (MRLs), development of organic sustainable production practices, or other market assurance programs.

Food safety compliance and traceability

- Investing in specialty crop research toward food safety compliance and traceability through implementation of practices, trainings, or systems development and preparation for and/or assistance in compliance with the Food Safety Modernization Act (FSMA).

Efficiency of distribution systems

- Improving efficiency of distribution systems by enhancing the shelf life and marketability of crops/farm products through shared post-harvest handling and storage, logistics, warehousing, cold storage, or transportation.

Pest and disease management

- Address pest and management issues that affect or protect markets and minimize economic harm to specialty crop growers.

Training and equipping the next generation

- Training and equipping the next generation of farmers in agronomic, economic, and environmental stewardship skills by introducing, educating and recruiting people to the variety of specialty crop career opportunities

On farm labor needs

- Connecting growers with hiring resources, providing technical information about laws and compliance, or developing mechanization or methodologies for routine or repetitive labor demands. Create and implement workforce training programs or tools to maintain the technical skills required to keep Oregon specialty crops sector competitive.

Productivity enhancements, innovation, value added

- Investing in projects that address productivity enhancements, innovation, value added products and other production efficiencies for specialty crops

Agriculture and food-related priorities identified by Oregon Solutions Network Regional Solutions Centers

- *To address rural economic development in Oregon. Projects must also comply with one or more of the required previously listed program priorities.*

On average each Spring Oregon receives 45 concept proposals (representing about $4 million in funding requests) – with an average of 7-9 new applicants per cycle. Oregon sends an average of 26 invitations to phase two of the SCBGP competitive process known as the full grant proposal phase. (about $2 million in funding requests). Oregon funds on average 24 projects a fiscal year with an average award of $73,601.

Geographically, projects have a strong statewide reach including projects on the NW Coast along with projects in southern Oregon as well as in the Willamette Valley. Both urban and rural communities are represented.

In fall of 2013 ODA-SCBPG Manager focused time on streamlining a reimbursement process excel workbook for the FY13 grant cycle. This process was released to the sub-grantees in mid December 2013 although, careful thought was spent on a step-by-step path on the use of the workbook, it is anticipated that trainings via webinar and in person will be needed. During the one-on-one project implementation trainings in the fall of 2014 and 2015 feedback was given by sub-awardees allowing for the SCBGP Manager to continue to add value to the tracking mechanism and enhance its use.

Oregon Department of Agriculture focused it's outreach efforts on key media outlets such as Capital Press Agriculture Weekly and ODA Ag Quarterly where key articles featuring SCBGP recipients were highlighted. More key focus was highlighting specialty crops within GrowingOregon magazine: http://www.farmflavor.com/magazine/growing-oregon-2014/

Additionally, outreach efforts were made through social media outlets such as, Facebook, Twitter. Instagram and LinkedIn.

LESSONS LEARNED:

During the duration of the project it was noted that key training of project management was needed, the more opportunities that can be taken to implement up front guidelines and restrictions and proper grant implementation the stronger the results will be.

ODA continues to evaluate the SCBGP and change its policies and procedures to meet the ever changing needs of the industry.

ODA-002 Identification of Native Bees as Pollinators of Oregon's Specialty Crops – *Final Report*

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PROJECT SUMMARY

Background

Native bees have received increased attention as alternatives to honey bees because of colony collapse disorder and other problems affecting honey bee health. However, there is little information on the significance of native bee pollination services to Oregon's specialty crops. Key to understanding this issue is knowledge about the specific bees associated with these crops, which is largely lacking.

Motivation

Based on other studies, preliminary information suggested that at least some native bees (bumble bees were the primary focus to date) were important to the pollination of at least some specialty crops. Since very few native bees are maintained and reared in a manner similar to honey bees, continuing services by native bees are dependent upon conservation and perhaps augmentation of this key agricultural resource. This can't be done unless it is understood which native bees (of the 500 or so species in Oregon) are important to pollination of specialty crops.

Complementation and Enhancement of Previous Native Bee SCBGP Project

The foundation of this project was provided by a Oregon Department of Agriculture (ODA) FY2011 pilot project: Native Bees and Their Importance to Oregon's Specialty Crops. That project collected many native bees from specialty crops, underscoring their importance in that regard. However, the design of that project demonstrated the association of native bees with the selected crops but did not provide direct information as to which native bees were actually pollinating those crops. Identification challenges were also much more formidable than originally recognized. The FY2012 project was designed to address these issues.

PROJECT APPROACH

Activities and Tasks Performed

Using insect vacuums, ten sites with the following seven specialty crops were sampled for bees: apple, blackberry, blueberry, carrot seed, cherry, strawberry, and summer squash. Only flowers of these crops were sampled. Sampling was conducted during the crop flowering period, ranging from early April through late July. Samples were taken in the morning and in the afternoon twice at each site. All bees from these samples were identified to the greatest resolution

possible. Analyses were performed to determine those species or genera which may be important pollinators of the selected crops.

Up to several hundred specimens of native bees were examined for external parasites.

An image-based guide was developed to enable identification of native bees associated with or found to be significant pollinators of selected specialty crops based on results from the current survey and the FY2011 SCBGP native bee project.

Results

3,115 bees were vacuumed from crop flowers. Bad weather prevented any sampling from squash flowers. Each crop had a unique set of bees found in the flowers. The separate "Bee Pie Charts" file has pie charts with the vacuuming data for each crop as well as charts including the FY2011 data for comparison. Honeybees comprised the majority of individuals in four crops – in fact, they were virtually the only species vacuumed from carrot flowers. This result was almost certainly due to sampling bias, especially as there were virtually no other flowers blooming in the vicinity of these fields. Data from the FY2011 SCBGP project were used to assess this possible sampling bias (see Appendix), which appeared significant. Native bees from several genera were numerically significant on blackberry and blueberry flowers and were numerically dominant on strawberry flowers. "Unexpected outcomes" under "LESSONS LEARNED" expands on these aspects of the project.

No external parasites were found on the specimens of native bees examined for these pests. Although the sample size was relatively small, the absence of such parasites suggests that they are not an important concern at this time. This information provides a baseline for future parasite load assessments.

An image-based guide has been developed enabling the identification of common species of bumblebees known from the Willamette Valley and the species or genera of other native bees found or thought to be significant pollinators of the sampled specialty crops. Images from this guide have already been used at numerous outreach events. This guide will be made available to all interested parties via the ODA website and various other outreach venues. A separate PDF of the guide, the file entitled "Bee Guide" is attached to this report. The current design is intended as a hard-copy pamphlet but a PowerPoint slide version will also be created.

In summary, in conjunction with the FY2011 SCBGP bee project, this project showed the great abundance and diversity of native bees in the selected specialty crops, that native bees may provide most of the pollination services in at least several of those crops, that the most abundant native bees in these settings are the sweat bees (about which little is known), that identification tools for small sweat bees in our region are largely lacking, and that sampling methods to ascertain the importance of native bees to specialty crop pollination must be further refined.

Contributions and role of project partners
The Oregon State University Arthropod Collection was crucial to this project by aiding ODA identifications of native bees through access to an extensive collection of native bees. Several OSU researchers, including Dr. Bill Stephen, also assisted ODA with identification of material collected by ODA. This project would not have been possible without the cooperation of growers who allowed ODA to access those specialty crops selected for sampling native bees.

GOALS AND OUTCOMES ACHIEVED

A primary goal was to identify the native bees found on the flowers of selected specialty crops, with the intent of ascertaining which species or genera may be significant pollinators. This was accomplished.

Another goal was to examine a subset of the collected bees for external parasites, to determine whether these were a concern for Oregon bee health and to establish a baseline in this regard. This was accomplished.

Data from the SCBGP bee projects was to be used to develop an image-based identification guide to native bees that may be important pollinators of the sampled specialty crops. This was accomplished.

An image-based guide was developed to enable identification of native bees associated with or found to be significant pollinators of selected specialty crops based on results from the current survey and the FY2011 SCBGP native bee project.

Results
3,115 bees were vacuumed from crop flowers. Bad weather prevented any sampling from squash flowers. Each crop had a unique set of bees found in the flowers. The separate "Bee Pie Charts" file has pie charts with the vacuuming data for each crop as well as charts including the FY2011 data for comparison. Honeybees comprised the majority of individuals in four crops – in fact, they were virtually the only species vacuumed from carrot flowers. This result was almost certainly due to sampling bias, especially as there were virtually no other flowers blooming in the vicinity of these fields. Data from the FY2011 SCBGP project were used to assess this possible sampling bias (see Appendix), which appeared significant. Native bees from several genera were numerically significant on blackberry and blueberry flowers and were numerically dominant on strawberry flowers. "Unexpected outcomes" under "LESSONS LEARNED" expands on these aspects of the project.

BENEFICIARIES

Groups and other operations that benefited from the completion of this project's accomplishments growers of the sampled specialty crops are the immediate beneficiaries of the information acquired during this project, particularly with regard to considerations of whether honeybee hives are necessary for pollination augmentation and how their agricultural practices may conserve or augment those native bees that may be primary pollinators of their crops. This information is valuable to other agriculturalists and land use managers in a similar vein. Organizations concerned with native bee health and abundance and diversity also benefit from these data. The PowerPoint native bee identification guide will benefit agriculturalists, land use managers, bee conservation groups, and the general public.

LESSONS LEARNED

Even though sampling was conducted as early as possible and during both morning and afternoon, it is likely that very early season bees, such as species of *Andrena*, *Ceratina*, and *Osmia*, or bees active very early or late in the day, were under sampled. Also, cold and wet weather impaired early season sampling.

Vacuum sampling from flowers was biased toward larger and more easily seen bees. Smaller, perhaps truly more abundant bees, were under-sampled. Honeybee numbers were almost certainly inflated because of this sampling bias. The carrot seed field results are a prime example of this problem.

The combined data from the SCBGP bee projects revealed unexpected diversity of native bees in specialty crops, underscoring the data gaps associated with these insects.
All bees are not equal with regard to pollination services. For instance, the "buzz pollination" of bumblebees is known to be much for effective for some crops than pollination performed through simple contact. So, raw abundance is not a measure of pollination efficiency. Assessing native bee pollination services to specialty crops will require more knowledge of pollination behavior for those species thought to be significant in that regard.

Although small sweat bees were found to be among the most abundant and, at least for some specialty crops, perhaps the most significant bees, there is a critical lack of identification tools for these bees. This lack makes it impossible to identify most to species level, which is essential for understanding the role of particular species and actions necessary to conserve or augment their populations.

Based on vacuuming results, honeybees were shown to be much less important than native bees for the pollination of strawberries and native bees were numerically significant pollinators of blackberries and blueberries. If more efficient pollination is important to berry growers, conservation and augmentation of native bees may be more beneficial than increasing honeybee hive presence.

Based on vacuuming results, the almost complete absence of native bees on carrot flowers was unexpected, particularly when compared to the great diversity of native bees (16,194 individuals in 41 species and genera) found in carrot seed fields by the FY2011 bee project. This shows that the vacuuming technique has flaws.

The combined data from the SCBGP bee projects revealed tremendous abundance and diversity of native bees in the surveyed specialty crops (see Appendix 2: Abundance of bee genera from combined SCBGP bee data), with 40,522 individuals in 27 genera and 56 species or subgenera. This phenomenon was particularly evident in carrot seed and flower seed fields.

Sweat bees (Halictidae) were far and way the most abundant bees found in the SCBGP projects. They were found in every crop surveyed. Members of the genus *Lasioglossum* were the most frequently collected bees across all sites, with the greatest numbers associated with fields of blackberry, blueberry, carrot, meadow foam, and radish, and with cherry orchards. A better understanding of the significance of these bees as specialty crop pollinators is clearly warranted. Since they nest in the ground, frequently in crop fields, agricultural and land use practices may have great consequences for the conservation or augmentation of these native bees.

ODA-003 Southeast Asia Trade Mission and Protocols for Quality Shipments – *Final Report*

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PROJECT SUMMARY

The purpose of this grant was to increase the awareness of Northwest fresh and processed specialty crop products such as potatoes, onions, berries and tree fruits, and build trade relationships between buyers and sellers targeting importers, wholesalers and retailers which would lead to additional specialty crop products sales. This project was also proposed to address the technical issues encountered during the previous mission related to the shipment of fresh product, particularly into Vietnam by co-developing quality shipment protocols.

To increase awareness and address the technical issues, this project was to organize a high profile trade mission. The trade mission used the relatively close geographic proximity of each of the markets to build on initial product introductions and develop new market opportunities as well as support the sales of existing specialty crop products from Oregon and Washington State. The project utilized the high profile of two state directors of agriculture and a sizable trade contingent of industry participants to create market interest in fresh and processed specialty crop products such as potatoes, onions, berries and tree fruits in the markets of Vietnam and the Philippines. At the same time, the mission afforded the grower/packer participants to gather invaluable market reconnaissance and learn firsthand from key importers and distributors of specialty crop products in these market areas.

This project built on the FY2010 Specialty Crop Grant Program project titled, “Specialty Crop Trade Mission” (e.g. WSDA/ODA Directors both traveling, reaching Asian markets), by reaching new markets and new sectors in existing markets (e.g. wholesale and retail). This project also built on the lessons learned around the technical issues encountered during the last mission related to the shipment of fresh product, particularly into Vietnam.

Based upon the work from the previous mission, we learned that the participation of high-level officials continues to have a significant impact in the promotion and sales of specialty crops in Asian markets.

PROJECT APPROACH

As proposed in the project, the SE Asia Trade Mission was successfully completed. From October 25, 2014 thru November 6, 2014 the directors for the Oregon Department of Agriculture

and the Washington State Department of Agriculture led a trade mission of 19 people to the Philippines and Vietnam. The trade contingent represented potato growers and packers from Washington and Oregon, onions, blueberries, the Port of Portland and an executive chef.

The mission included country briefings US Embassy teams in Manila, Philippines and Hanoi, Vietnam, a market briefing by FAS team from Ho Chi Minh City, Vietnam, market visits, a port tour, logistics presentations, a tour of a cold storage facility and meetings with importers and distributors to provide the trade contingent with a better understanding of the markets. The two directors enhanced the impact of the industry activities, by giving opening remarks and presenting awards at technical seminars, trade receipts and retail display contests throughout the mission. We leveraged our presence in the market to do a Northwest American-themed buffet lunch and dinner at the hotel where the Oregon and Washington Potato Commissions were holding their potato seminar and cooking demonstration along with the trade reception.

The delegation from Oregon and Washington arrived early for their meeting with the Vietnamese Ministry of Agriculture and Rural Development.

Based upon the work from the previous mission, we learned that the participation of high-level officials continues to have a significant impact in the promotion and sales of specialty crops in Asian markets. As a result, in Vietnam the delegation joined by US Foreign Agriculture Service representatives met with Vietnamese government officials. These meetings were valuable to build awareness of the quality specialty products that Oregon is currently available in the market

as well as those specialty crop products, such as fresh blueberries that are in the process of having a formal market access request from APHIS. The Director of Agriculture for Oregon also joined APHIS for a meeting with the Philippines' Bureau of Plant Industry (BPI).

The project partners were the Washington Department of Agriculture and both the Washington and Oregon Potato Commissions. The Washington Department of Agriculture played a significant role on this mission by bringing their Director and other key managers. Having the top officials from two state departments of agriculture, made the meetings in both countries more impactful. The potato commissions from each state created potato seminars for buyers, chefs and culinary students. These educational seminars not only supported the potato commissions' efforts in the market, but provided a great illustration to the mission delegates representing other commodities of what could be accomplished to educate and build awareness in new markets.

GOALS AND OUTCOMES ACHIEVED

The purpose of this grant was to increase the awareness of Northwest fresh and processed specialty crop products such as potatoes, onions, berries and tree fruits, as well as to build trade relationships between buyers and sellers targeting importers, wholesalers and retailers which would lead to additional specialty crop products sales. This project was also proposed to address the technical issues encountered during the previous mission related to the shipment of fresh product, particularly into Vietnam by co-developing quality shipment protocols.

To increase awareness and address the technical issues, this project was to organize a high profile trade mission. To accomplish these goals, directors for the Oregon Department of Agriculture and the Washington State Department of Agriculture led a trade mission of 19 people to the Philippines and Vietnam. This high profile mission, from October 25, 2014 thru November 6, 2014, executed activities and key meetings Manila, Hanoi and Ho Chi Minh City.

November 2015 marks 12 months from the completion of the project. Although it was expected that in the 12 months following the project, Oregon and Washington State exporters of specialty crop products will initiate and expand exports in Vietnam and the Philippines.

In follow up to the mission, participants were surveyed to measure the value of the mission of increasing their knowledge and understanding of the export markets in Vietnam and the Philippines. We expected to see new direct sales to exceed a target of $500,000 in the next full year after the mission.

We also reviewed trade data for potato shipments from Oregon for the past few years, using 2013 as the baseline as defined in the grant. This data includes fresh potato shipments for both table stock and chipping stock. We found that the volume of potato shipments to the Philippines were up 23% over the benchmark (2013) against the period October 1, 2014 – September 30, 2015. For Vietnam the overall volumes significantly down from the benchmark year of 2013.

In addition, we surveyed the mission participants for potato sales and found that although the mission generated about eight inquiries as direct result, only $30,000 in fresh potato sales have occurred to date. The participants believe that the reason that sales are down from the expected number is due to the strong dollar. With the strong dollar, buyers from the Philippines and Vietnam cannot justify the even high price in their local currency to buy Oregon's premium potatoes. The good news is that buyers in these markets are now more aware of Oregon's potatoes and will likely buy when the dollar is not as strong against their local currency.

We also received inquiries for Oregon's onions as a result of the connections made on the trade mission. In fact, one of the inquiries for 7,200 pounds of onions came through the Oregon Department of Agriculture. In follow up with the industry, it seems this and other onion inquiries from the trade mission have not yet resulted in sales. However, we expect these inquiries to turn into orders when the Philippine peso and Vietnam dong are stronger.

For blueberries, we do not yet have market access for fresh blueberries in either the Philippines or Vietnam. The trade mission allowed the Oregon Department of Agriculture and Oregon Blueberry Commission to meet with APHIS to discuss the path forward. In government meetings with APHIS the Oregon Department of Agriculture was able to better understand the status of market access in the Philippines. This was helpful for the state's blueberry industry. In Vietnam, the Oregon Blueberry Commission joined government meetings and had meetings with potential buyers. They learned that there is already a strong awareness of the health benefits of blueberries among these key entities. They are very hopeful that the market access request will move forward quickly. Due to the market access restrictions on fresh blueberries, we were not able to see results in the 12 months following the trade mission. The results of this mission and other work in the market around fresh blueberries will yield results in the long term.

BENEFICIARIES

The primary beneficiaries of this effort were growers and shippers of Oregon's potatoes, onions and blueberries. The trade mission included country briefings US Embassy teams in Manila, Philippines and Hanoi, Vietnam, a market briefing by FAS team from Ho Chi Minh City, Vietnam, market visits, a port tour, logistics presentations, a tour of a cold storage facility and meetings with importers and distributors to provide the trade contingent with a better understanding of the markets. The two directors enhanced the impact of the industry activities, by giving opening remarks and presenting awards at technical seminars, trade receipts and retail display contests throughout the mission. We leveraged our presence in the market to do a Northwest American-themed buffet lunch and dinner at the hotel where the Oregon and Washington Potato Commissions were holding their potato seminar and cooking demonstration along with the trade reception.

The growers, packers and commissioners from the potato, onion and blueberry industries in Oregon came away from the trade mission with a much greater understanding of the markets and opportunities as well as connections with importers, distributors, retailers, chefs, culinary students and logistics companies. Their participation in the mission led to many inquiries and some sales. For blueberries, they made the connections and learned the next steps in the process to gain market access for fresh blueberries. Most importantly, they learned that buyers in these markets are very interested in fresh blueberries once they are able to begin shipping to the Philippines and Vietnam.

LESSONS LEARNED

One unexpected outcome of this mission was the strong awareness of the health benefits of blueberries that existed among government officials in Vietnam and produce buyers in Vietnam. Delighted by this finding, the Oregon Blueberry Commission joined with the Oregon Potato Commission and the Oregon Department of Agriculture to exhibit at Food & Hotel Vietnam show in April 2015. Participation in this show built on the awareness and connections that these entities had in the market.

The challenge of selling commodity products, is that you are subject to global prices and currency fluctuations. We were disappointed that the stronger dollar coincided with the efforts of this grant project, making it difficult to reach our sales targets. We believe that the work completed on the trade mission will yield the results expected, but over a longer time horizon. One of the things that would have strengthened our impact, in spite of the currency fluctuations, may have been to bring some of Oregon's niche products. For example, Oregon and Washington both produce many varieties of the specialty potatoes, such as fingerlings, purples and others. Oregon also produces some of the largest onions. Having companies in the delegation that could offer these more specialized products that are less susceptible to price pressure, would have helped meet the targets of this project.

ODA-004 Establishing a Nursery Cleanliness Program for Boxwood Blight – *Final report*

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Boxwood blight (Cylindrocladium pseudonaviculatum) was discovered in the United Kingdom in the early 1990's, causing a severe blight disease on Buxus. A disease outbreak in 1998 throughout Europe has virtually eliminated Buxus as a nursery crop there. Boxwood blight severely impacts plant appearance affecting marketability and kills young plants. This disease moves very rapidly under the right conditions, with the disease cycle taking 7- to 10-days. In October 2011, boxwood blight was reported infecting plants in North Carolina, Connecticut, and Virginia. After these initial finds, USDA Animal and Plant Health Inspection Service (APHIS) requested several states conduct investigations to determine if the disease was elsewhere. In response, the Oregon Department of Agriculture (ODA) surveyed and collected samples from 18 nurseries, detecting boxwood blight in three. The disease was also reported in four other states and in British Columbia. The ODA worked with the positive nurseries to eradicate the disease. However, customers raised concerns about Buxus nursery stock from Oregon. We requested Specialty Crop Block Grant funding to address those concerns by developing a voluntary Nursery Cleanliness Program for Boxwood Blight. Our goal was to have this voluntary quality management program preclude the need for a more stringent regulatory response, such as state and/or federal quarantines. After the first year of the project, a secondary objective was identified: identifying an effective mitigation measure for boxwood blight infested soil.

PROJECT APPROACH

1) Develop boxwood blight education and outreach materials for Oregon nurseries describing current best management practices for disease mitigation.
The Oregon State University (OSU) Extension Service was awarded a subcontract by the ODA to accomplish this task. The results of this effort are described in the attached report (Attachment 1).

2) Develop a voluntary nursery cleanliness program for Buxus and Sarcococca plants.
The voluntary program developed by the ODA was based on the best management practices recommended by the Horticultural Research Institute (the research branch of the American Nursery & Landscape Association) and on a compliance agreement template developed by the National Plant Board. Because boxwood blight had such a rapid life cycle (7- to 10-days) and can spread so quickly, one key difference in our Nursery Cleanliness Program and associated compliance agreement was empowering the nurseries to act immediately upon detection of the disease within their nursery stock. Typically, nurseries have to wait until an official confirmation is made to take action. However, time is of the essence when the disease has such a

rapid life cycle. Waiting for official confirmation could result in the disease becoming permanently established within the nursery.

The compliance agreement outlines the requirements for handling host plant buy-ins, for training nursery personnel on disease scouting, for sanitation practices within blocks of susceptible plants, for what to do if boxwood blight is found, for recordkeeping, and for complying with official audits. When signing the compliance agreements, nurseries are audited to ensure they can meet the minimum requirements for participation as outline in the compliance agreement. A copy of blank compliance agreement is attached (Attachment 2). The compliance agreement is not a static document. It has been amended as we have learned more about this disease and its management.

The ODA developed a standardized form for nursery inspectors to use when conducting audits. The audit form covers the general requirements of the program, including assessing how the nursery handles host plant buy-ins, cultural practices for host plants grown on site, nursery sanitation practices, and responses to detection(s) of boxwood blight. The audit form is based off of the compliance agreement, which is based on the latest scientific information available on boxwood blight. As a result, Nursery inspectors are trained annually on boxwood blight and the requirements of the Nursery Cleanliness Program.

The ODA surveyed program participants in August 2013 to assess the overall effectiveness of the Nursery Cleanliness Program. Nurseries were asked about how long they had participated in the program, how many shipments of Buxus and other susceptible plants were made, how many were rejected for boxwood blight, any non-compliance issues the nursery may have had, and whether those non-compliance issues may have affected acceptance of plant shipments.

3) (Added) Identify effective best management practices specifically for the mitigation of boxwood blight inoculum in field soil.
One major lesson learned during the first year of the project is that the best management practices included in the compliance agreement are geared primarily for containerized nursery stock; some of these best management practices are less effective for field-grown nursery stock. We were given the opportunity to address one primary concern for growers of field-grown boxwood plants: identifying successful treatments for the mitigation of C. pseudonaviculatum inoculum in field soil. The fungus forms survival structures called sclerotia that allow it to persist in infested soil for years. This is a major issue for nurseries that produce field-grown plants as that can potentially take a field out of boxwood production for several seasons. As a follow-up to our initial program development, we also explored the use of steam to eliminate C. pseudonaviculatum inoculum from infested soil.

GOALS AND OUTCOMES ACHIEVED

Our GOAL was to establish a nursery cleanliness program for boxwood blight that is acceptable nationally and internationally, with the BENCHMARK of establishing a nursery cleanliness program that helped Oregon nurseries meet customer demand for Buxus, Sarcococca, and Pachysandra nursery stock free of boxwood blight. Our PERFORMANCE MEASURES focused on three areas; education and outreach, acceptance of the program by Oregon customers, and adherence to the program requirements by Oregon nurseries. And added performance measure was the identification of a successful mitigation measure to eliminate boxwood blight inoculum in infested soils.

EDUCATION AND OUTREACH

Attached is the full-length report from OSU Extension about their education and outreach activities. In all, three workshops (one in Spanish) focused on boxwood blight were held, with a total of 77 participants in attendance (TARGET = 25 to 50 participants). On a 5-point rating scale, audiences found the workshops useful (4.2-4.7 average rating), of good quality (4.2-4.9 average rating), and could use the information (4.0-4.2 rating). The comprehension of the material improved from a low (2.2) initial awareness about the disease to a high/moderate awareness level (4.0). The TARGET for comprehension was 85%, or a score of 4.25.

ACCEPTANCE OF THE PROGRAM BY OREGON CUSTOMERS

The nurseries were surveyed towards the end of the initial year of the project to determine if the cleanliness program met its stated TARGET of 95% acceptance by receiving states/customers. Fifteen of the 23 nurseries participating in the program in 2013 returned their surveys. Nine nurseries had participated in the program for >6-months, four for 3- to 6-mo, one for <3-mo, and one nursery did not answer the question. Five nurseries had sent <25 shipments of boxwood, three had sent 26-50 shipments, three had sent 51-100 shipments, and four had sent >100 shipments. None of the nurseries reported any rejections of their shipments, indicating 100% acceptance by the receiving states. This met the TARGET for acceptance of the program.

ADHERENCE TO PROGRAM REQUIREMENTS BY OREGON NURSERIES

Results from the audits of nurseries participating in the cleanliness program were collated and overall compliance with the program requirements determined for those nurseries. Twenty-one audits have been completed. The TARGET for this performance measure was an average of 95% compliance with program requirements. Overall, the average nursery compliance with program requirements in 2013 was 94.2%, below our target. Looking at subsets of the program requirements, nursery inspectors found 100% compliance with the general requirements for participation in the program. For the requirements for handling of host plant buy-ins, the inspectors found 92.5% compliance, with the most common non-compliance issue being a lack of required inspection records. For the requirements for handling of host nursery plants on hand, the inspectores found 93.7% compliance, with the most common non-compliance issue being a lack of training of nursery personnel on disease recognition and cleanliness program

requirements. For the requirements for nursery sanitation, the inspectors found 89.3% compliance, with the most common non-compliance issues involving a lack of regular sanitation in nursery blocks and poor watering practices. For the requirements for responses to detections of boxwood blight, the inspectors found 99.4% compliance, with the sole non-compliance issue being a nursery failing to report a positive detection to ODA in a timely manner. Based on these results, further emphasis must be placed on helping the nurseries understand the requirements for host plant buy-ins, for handling nursery stock on hand, and for sanitation.

Nurseries in the cleanliness program were audited again in 2014, with audits based on the revised compliance agreement. Again, these revisions were made based on the best available science at the time. A total of 20 nurseries participated in the program in 2014 and all audits have been completed. Overall, the average nursery compliance with program requirements was 97.6%, above our TARGET of 95% compliance. Looking at subsets of the program requirements, nursery inspectors found 100% compliance with the general requirements for participation in the program. For the requirements for handling of host plant buy-ins, the inspectors found 99.3%% compliance, with the only non-compliance issue being purchasing plants from out-of-state sources that weren't part of a formal cleanliness program. For the requirements for handling of host nursery plants on hand, the inspectors found 100% compliance. For the requirements for nursery sanitiation, the inspectors found 92.5% compliance, with the non-compliance issues involving poor rotation of work crews (e.g., not pruning in high risk plants last), overhead watering, not sanitizing tools between blocks or houses, not removing pruning or other leafy debris in a timely manner, allowing standing water in blocks of Buxaceae, planting into used pots that haven't been cleaned or sanitized, and taking cuttings from landscape plants. For the requirements for responses to detections of boxwood blight, the inspectors found 99.4% compliance, with the sole non-compliance issue being a nursery replanting into used pots that weren't cleaned or sanitized. Overall, 2014 saw a marked improvement in compliance with the program requirements. However, based on these results, further emphasis must be placed on helping the nurseries understand the requirements for sanitation and the critical role it plays in disease management.

ALTERNATIVE TREATMENTS FOR SOILBORNE INOCULUM

The best management practices that have been described in the scientific literature and are included in our official compliance agreements are designed for plants grown in containers. However, we have nurseries in the program that also grow plants in the field under a very different set of conditions. Early in 2013, we determined the best management practices in our official compliance agreement did not adequately address the needs of nurseries with field-grown stock in terms of pest risk mitigation. The nurseries' greatest concern was the elimination of boxwood blight from the field soil in which infected plants were found. Prior research has shown C. pseudonaviculatum develops specialized structures (microsclerotia) in infested leaves and twigs that allow the fungus to survive in the soil for up to 5-years. This could have a devastating effect on a nursery's ability to grown field-grown stock.

Initially, our goal was to conduct treatment trials in nurseries with infected field-grown stock. However, we did not have any nurseries report issues with boxwood blight in their field-grown plants this year. Thus, we conducted treatment trials in the laboratory and in experimental raised beds to:

- Identify a potential time/temperature regime that would kill boxwood blight in infested leaves; and,
- Verify the efficacy of the time/temperature regime with controlled experiments conducted in raised beds at the ODA's Hawthorne Facility.

We conducted several replicated trials in the laboratory to determine what time/temperature regime would effectively eliminate C. pseudonaviculatum from infested leaves. To simulate natural conditions, one set of infested leaves was kept moistened during heat treatment (winter/spring conditions) while a second set was allowed to dry during heat treatment (summer/fall conditions). The leaves were then placed in a moist chamber to stimulate sporulation. Based on this experiment, the presence of moisture during heat treatment enhanced the pathogen's ability to survive (Table 1). However, extended exposure to temperatures of 40°C or higher effectively killed the pathogen in infested leaves, particularly if conditions were dry.

Table 1. Percentage of leaves sporulating after heat treatment in the laboratory under differing environmental conditions.

Time in heat treatment	Percentage of infested leaves sporulating post-treatment			
	High moisture conditions		Low moisture conditions	
	40°C	50°C	40°C	50°C
30-min	100%	73%	70	20
1-h	60%	17%	0	0
2-h	50%	0%	0	0
24-h	0%	0%	0	0

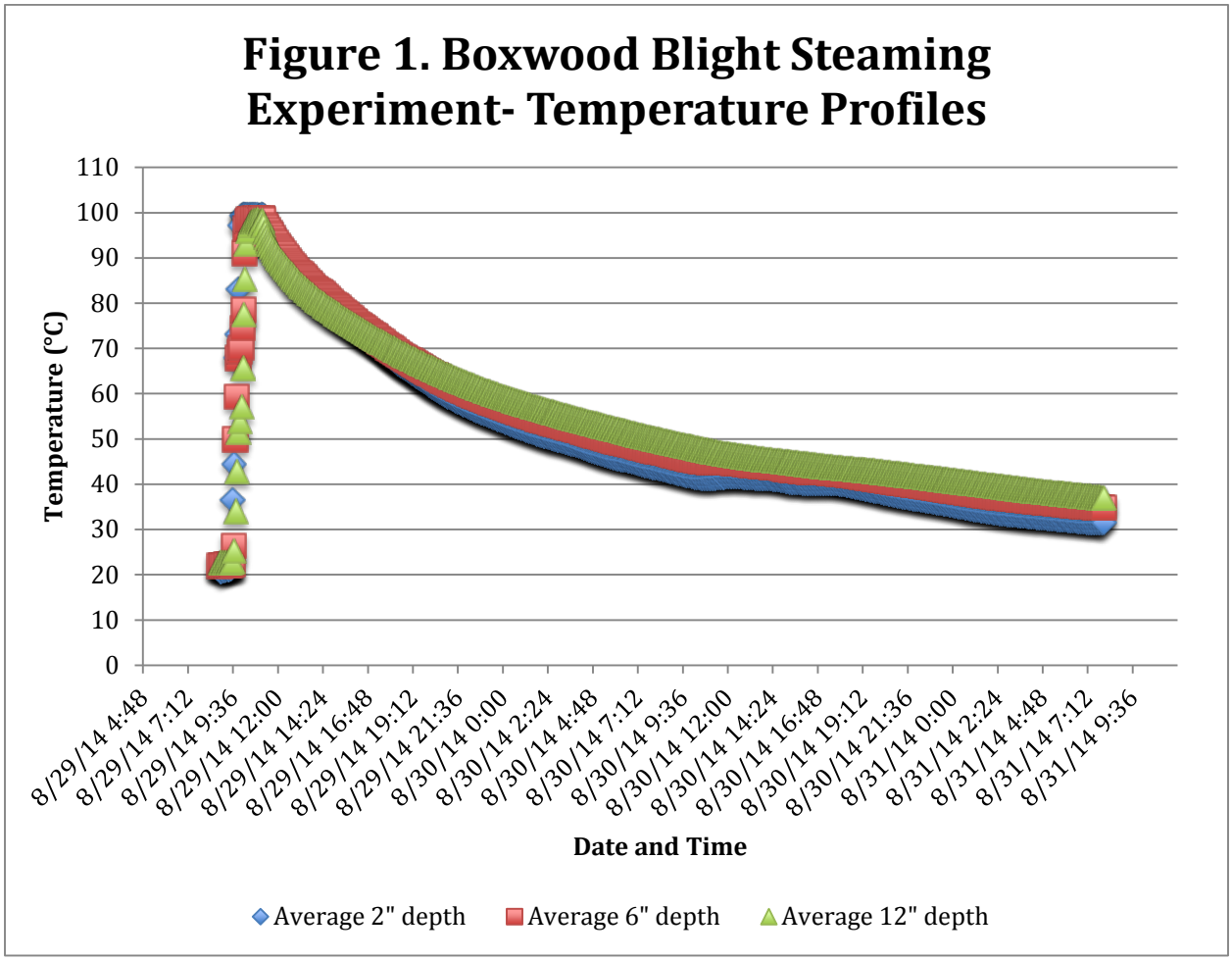
We conducted steam treatment trials in a raised bed located at the ODA's Hawthorne Facility. The raised bed was 8' x 8' x 8" (L x W x D) in size and filled with native soil. For the experiment, a total of 45 sachets containing five infected leaves each were used. The sachets were located in the four corners of the raised bed as well as in the middle. At each location, the sachets were buried at three depths (2", 6" and 12") with three sachets placed at each depth. Following steam treatment, the sachets were removed and then plated out onto glucose yeast extract tyrosine agar to determine if the pathogen survived the treatment.

Based on the preliminary time/temperature data obtained from the laboratory experiments, we chose 50°C as the target temperature and 60-min as the target time for steam treatment. To monitor the steam treatment, temperature probes were placed with the sachets at each location

and depth, and then monitored at 5-min intervals to ensure the soil reached 50°C for at least 60-min (Figure 1).

Once the soil returned to near ambient temperatures, the sachets were removed and plated as described above. After 1-wk, the plated leaves were examined for C. pseudonaviculatum. The pathogen was not recovered from any of the leaves, indicating the steam treatment successfully eliminated the pathogen from the soil at all three depths. This experiment was replicated, with identical results from the second steam treatment; no C. pseudonaviculatum was recovered from the infested leaves.

Based on these results, steam treating soil to 50°C for 60-min is an effective way to eliminate boxwood blight inoculum from the soil.



BENEFICIARIES

All Oregon nurseries that grow Buxus and other host plants susceptible to boxwood blight are eligible to participate in the program. Currently, 20 nurseries are participating in the program (http://www.oregon.gov/ODA/programs/NurseryChristmasTree/Pages/BoxwoodBlight.aspx).

During the survey of program participants, the nurseries indicated 100% acceptance of Buxus, Sarcococca, and Pachysandra shipments by their customers.

Nurseries with field-grown stock now have a tool available to eliminate boxwood blight inoculum from infested field plantings, thus allowing their fields to remain in production.

LESSONS LEARNED

Being proactive and developing a voluntary, non-quarantine program that met the regulatory concerns of receiving states prevented the adoption of quarantines by those states and by the federal government. This program has allowed our growers to safely ship healthy plants interstate, even when the disease was detected at the nursery.

Expecting the nurseries to be able to comply with the requirements of the boxwood blight cleanliness program within 1-yr (or less) may have been unrealistic. However, within 2-yr, the nurseries were able to meet our goal of 95% compliance with all program requirements. Education is remains a key component of the program. Many nurseries do not understand what a high risk plant is (certain varieties of Buxus are more susceptible to boxwood blight than others). This resulted in non-compliance issues that could have been easily avoided. Similarly, they do not understand the risk associated with poor sanitation of plant debris (a potential long-term source of inoculum).

Best management practices in nurseries will differ depending upon whether the plants are container-grown or field-grown. This is particularly critical for soil-borne inoculum, which could force a field out of production for several seasons to eliminate the inoculum. We were able to identify steam as an effective treatment for soil-borne inoculum.

ODA-S05 Developing the Truffle Production Industry in Oregon – *Final report*

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PROJECT SUMMARY

The goal of our project was to establish a demonstration orchard in the Willamette Valley to showcase the new agricultural practice of inoculating nut trees with culinary truffles. A secondary goal was to spearhead educational and promotional efforts to raise awareness of the potential benefits of this emerging market.

The motivation for the project came from a 2010 feasibility study with a notable finding that predicted a potential net revenue of $10,000 per acre from a productive truffle orchard. Truffle production is on the rise in other parts of the country: California, North Carolina, and Arizona. By taking the lead in actively promoting truffle cultivation in Oregon, our hope was to gain a market advantage over these other states.

The site of the orchard is a Demonstration Farm near Springfield, with a central goal of helping farmers connect with emerging market opportunities.

PROJECT APPROACH

Activities performed during the grant period included:

- Establishing a one-acre orchard at the Berggren Demonstration Farm. The orchard was planted during the 2012 Oregon Truffle Festival, during the Grower's Forum. We were able to connect with approximately 70 other active or potential truffle farmers during this event.
- Outreach to potential truffle farmers via events, electronic communication and tours. During the grant period, we coordinated approximately 8 tours of the demonstration orchard, reaching a total of approximately 80 current or potential truffle farmers. We also presented at two growers conferences.

As with some other perennial crops, the truffles may not begin producing 'fruiting bodies' until the orchard is 7 to 10 years old; as a result, we cannot yet say with certainty whether our orchard will serve as a usable demonstration site in future.
Our two main industry partners on this project were New World Truffieres (technical advisor and in-kind supporter) and the Oregon Truffle Festival (outreach and education venue).

GOALS AND OUTCOMES ACHIEVED

Activities completed during the grant period were:

- Establish truffle orchard at Berggren Demonstration Farm: site assessment; field preparation; plant and maintain trees.
    - We originally intended to plant 3 acres of orchard, but based on early challenges we planted only 1 acre.
- Provide outreach and training to farmers on truffle production activities.
    - We presented at two growers conferences and hosted multiple informal tours at the Berggren Demonstration Farm.

Because the orchard will not begin producing truffles until 2018-2020, it is too early for us to be able to predict the long-term outcomes of this project. However, a notable development during the grant period was the initial production of several other 'young' orchards in Oregon's Willamette Valley. This is a promising sign for truffle production, and these developments received regional and national media coverage.

BENEFICIARIES

The beneficiaries of this project were farmers interested in truffle production. This includes current farmers in our area curious about putting acreage into production, as well as beginning farmers that we serve through the local chapter of the Rogue Farm Corps training program. For the most part, it will be difficult for us to assess the impact of the project until the truffle orchard becomes productive. We did not learn of any farmers putting acreage into production with truffles as a result of the grant; however, numerous farmers are paying attention to our orchard as it matures.

LESSONS LEARNED

Unfortunately, several of the original goals of the project were not fully achieved. This was due to several factors, including:

- A miscommunication between the project manager and technical advisor regarding the extensive modification of soil pH in order to ensure truffle production. We were not aware when drafting the proposal that truffles need soil in the 7.5-8.5 pH range: this requires amending the soil with 25 tons of lime per acre initially, and repeatedly amending the orchard with up to 10 additional tons annually. We simply did not project a long-term budget to account for this annual cost: potentially thousands of dollars each year.
- There were interpersonal dynamics as a result of this first challenge that resulted in a lack of trust between project managers and industry partners.
- The time lag between orchard establishment and truffle production (8-10 years) meant that even the farmers who were interested in truffle production indicated a reluctance to invest in this new crop without seeing whether our plot is successful.
- High costs involved in establishing a truffle orchard may limit the number of farmers who can access the capital necessary to get started in truffle production.

Despite the challenges we faced in this project, there are clear signs that truffle production may still become a viable new industry in Oregon. The Oregon Truffle Festival, which has sold out

every year 2012-2014, is now planning to relocate from Eugene to Portland, to accommodate more participants. New truffle businesses, such as Umami Truffle Dogs, are raising the profile of Oregon-harvested truffles. Regional food branding efforts coordinated by municipal government including Lane County and the City of Eugene, are emphasizing specialty crops such as truffles as a unique food product that reflects the clean water, forests, and agricultural heritage of the Willamette Valley. We will know in several years whether our demonstration orchard will be able to serve as a useful venue for educating farmers about opportunities connected to truffle production.

The subgrantee has worked the Oregon Department of Agriculture to forfeit the remainder of the funding of this project in the amount of $50,070.33. The Oregon Department of Agriculture will work with industry stakeholders to identify priority projects to focus these unspent funds towards and submit and amendment to the USDA early 2015.

ODA-S06 Cracking the Distribution Dilemma in Support of Specialty Crop Producers – *Final Report*

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PROJECT SUMMARY

Cracking the Distribution Dilemma was designed to explore potential solutions for developing an effective distribution model to allow independent specialty crop producers to coordinate large-scale distribution of their products to wholesale food buyers. This had been the most frequently cited and acutely described need we had heard from specialty crop producers using FoodHub. Our goals were to help small and midsize independent producers using FoodHub increase their awareness of distribution alternatives in the region, and to help open market access for these producers with high-volume buyers, such as schools and hospitals.

When this project was conceived and awarded, the FoodHub team was exploring a partnership with an innovative start-up company based in Boston, MA that was developing a feasible, practical, and replicable distribution model for that region's food shed. FoodHub intended to collaborate with several local stakeholders to adapt a distribution model for Oregon.

This project was developed in response to ODA's funding priorities for **Market development and access** and **Innovation and productivity**, by creating a new distribution model that would allow specialty crop producers to competitively market and sell commodities to high-volume regional purchasers. Beneficiaries include specialty crop producers, wholesale buyers at all scales, and consumers of specialty crop products throughout Oregon and the region.

The project built on prior funding by leveraging and extending the utility of FoodHub, www.food-hub.org, an online platform developed with support from ODA, which facilitates the connection of small and midsized producers directly to chefs, value-added food manufacturers, foodservice directors and other wholesale food buyers, as well as to important intermediaries such as brokers and distributors.

PROJECT APPROACH

A literature review was executed in the early phase of the project to understand the state of knowledge and work already done around the country on the topic of distribution as it relates to small and midsize independent producers. This level of secondary research provided helpful

context and illuminated key issues and challenges to cracking the distribution dilemma. A copy of the final white paper is included in the supplementary project materials attached to this report.

Extensive site visits and one-on-one interviews with distribution entities around the country were conducted, both as a direct part of this project plan and in the course of other complementary work and travel. Site visits included Organically Grown Company (Portland, OR), Veritable Vegetable (San Francisco, CA), Just Local Foods (Viroqua, WI), Organic Logistics (La Farge, WI), Goodness Greenness (Chicago, IL), Testa Produce (Chicago, IL), the Cooperative Distribution Center, MoGro and La Montanita (all in and around Albuquerque, NM), Greenling (Austin, TX), and Ontario Food Terminal (Toronto, Ontario, Canada). From those visits the team gleaned key information regarding the layout and operations of successful distribution entities, as well as vivid insight into the both daily and long-term challenges inherent in effective execution. Please see the photo log from those visits, included in the attached project materials.

A section of the FoodHub KnowledgeBase dedicated to distribution and (https://food-hub.org/knowledgebase/browse/101) was launched and additional resources may now be added on a rolling basis as they are developed and discovered in Ecotrust's ongoing food systems work.

And finally, information was collected directly from specialty crop producers seeking to overcome distribution challenges in Oregon via FoodHub and in person. This information proved valuable in many ways, both in itself and in comparison to findings from site visits as described above. Perhaps most revealing, our comparison of Oregon data to other sites highlighted the fact that, other than Organically Grown Company (which distributes only organic produce), Oregon lacks infrastructure dedicated to the wholesale distribution of local/regional products.

GOALS AND OUTCOMES ACHIEVED

Throughout the project, activities proceeded largely as planned, with some adjustments and changes that were detailed in Ecotrust's biannual reports. These project adjustments included timing of project components, changes in travel schedule and site visits, and the decision not to pursue a partnership with FoodEx to replicate its distribution model in Oregon. Primary activities completed by the project team in order to achieve our performance goals included stakeholder outreach and engagement, literature review and completion of a white paper, site visits to a range of distribution entities and other relevant businesses, surveys of FoodHub Members, analysis of summary of research findings, launch of the Distribution section of the FoodHub Knowledge Base, and project evaluation.

A final assessment of progress towards each of the two project's two expected outcomes is described below.

Outcome 1: The a goal: Through a new set of resources on FoodHub, project team worked to increase knowledge among specialty crop producers and buyers about distribution options and

sourcing of specialty crops. Our **target outcome** was that by the completion of the project, 50% of FoodHub's existing Specialty Crop producer members at time of proposal (**Benchmark**) would report improved knowledge about regional distribution. The team completed both output targets (surveying stakeholders and launching the distribution topic section in the FoodHub Knowledge Base), but progress against this outcome goal was modest. Extrapolating from results of the FoodHub Member Survey, we estimate that approximately 25% of the 550 original specialty crop producers and buyers on FoodHub report increased knowledge of regional distribution. This indicates additional opportunity for continuing to leverage the materials created as part of this project and sharing/promoting them more broadly among FoodHub Members and other stakeholders.

Outcome 2: The project team exceeded the **output targets** of increasing FoodHub membership of Oregon Specialty Crop producers (to a target of 690) and high-volume buyers (target: 250). As of this report, **736** specialty crop producers in Oregon are now registered on FoodHub (**Benchmark 1**). In addition, the high volume buyer goal has been exceeded, with **300** institutional buyers (Oregon only) (**Benchmark 2**). These buyers include 28 colleges/universities, 118 K-12 schools or school districts, 48 Pre-K/daycare facilities, 47 health care facilities, 1 correctional facility, and 58 foodservice providers.

BENEFICIARIES

This project primarily benefited two key groups of beneficiaries, namely the Oregon specialty crop producers and the larger scale wholesale food buyers who are using FoodHub to find each other, connect and do business. The community of specialty crop sellers and buyers in Oregon now using FoodHub grew significantly, providing a larger pool of buyers to which specialty crop producers have access, and a larger pool of supply from which buyers can source. With procurement budgets counted in the millions of dollars for local foodservice contractors, this represents significant market potential for Oregon agriculture being traded within the state.

Although quantification of the economic development impact of the project isn't possible given the nature of the research information collected according to the approved project plan, the FoodHub team at Ecotrust became much more informed as to the opportunities and challenges presented by the complex and interrelated issues facing local food distribution: high capital costs, extremely lean margins, high perishability, and food safety concerns. We have become much more effective at consulting with specialty crop producers (FoodHub Members and otherwise) who come to us seeking advice and counsel on infrastructure challenges, and we have managed, largely as a result of research done during this project, to get significant resources deployed by organizations beyond ODA to invest in local/regional food infrastructure development. This includes a $175,000 grant from Meyer Memorial Trust, to identify aggregation, processing, and distribution infrastructure gaps currently preventing regional producers from accessing institutional supply chains, and propose broad-based solutions.

LESSONS LEARNED

Although distribution was the key need project staff had heard anecdotally (and loudly) from specialty crop producers on FoodHub in Oregon that led directly to the development of this project, during the course of completing this project the team learned that **this need is actually more complex than originally presented to us**. Our findings indicate that there are in fact three components: aggregation, processing, and distribution (now referred to collectively as "infrastructure") to be coordinated in order to effectively open institutional market access for regional-scale specialty crop producers.

Research into the **business models of regional distributors suggests extreme caution** should be exercised before entering into this business, in order to ensure the best chance of developing an effective solution that can be sustained over time. High capital costs and low margins of minimally processed food yield net profit margins ranging from **0.5% - 0.9%** for well-established regional produce distributors; 4-7% for large-scale broadliners.

Some infrastructure capacity exists regionally that could be leveraged in support of specialty crop producers, but it is not well organized and gaps remain. A host of food processors, aggregators, cold and dry storage providers, and distributors likely offer much of the capacity that small and midsized producers need, however much of it is only available to participants in vertically integrated systems, requires significant minimum quantities, or is simply unknown to smaller producers.

FoodEx, the Boston-based company whose model Ecotrust had identified for replication in Oregon as a focus of this project, was ultimately **not considered a viable partner**. Some factors which led to this decision included: (1) the necessity of FoodEx focusing on the New England market to prove the business model, which, it was ultimately decided, would preclude the replication of the model in Oregon in the timeframe we'd hoped; (2) the difficulty of attempting to partner long distance, which took a high toll on the small staffs at both entities. Much was learned in the exploration of the opportunity however, and the insights gleaned continue to inform our consideration of infrastructure interventions here in Oregon.

Learning generated through this project also clarified the key issues facing institutional buyers in sourcing specialty crops from within the state, and that learning has been shared in another initiative supported by ODA, the Northwest Food Buyers' Alliance. Further, the learning from this project is currently informing Ecotrust's restoration and further development of a city block in SE Portland, called The Redd on Salmon Street, to support the infrastructure needs of Oregon specialty crop producers and large scale buyers.

ODA-S07 Growers Propose New Marketing Efforts to Promote the Continued Growth of Potato Production and Sales – *Final report*

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PROJECT SUMMARY

The purpose of this project was for Klamath Basin Fresh Direct (KBFD) to expand on the existing marketing efforts of organic and specialty crops from a local program to a nationwide and international program to enhance the marketing of specialty crops and to further establish a sustainable future for family farms in the Klamath Basin. Our ultimate goal was to increase overall organic potato acreage by 50% over the two-year grant period by adding new varieties to be marketed under the KBFO brand name and to develop a cohesive brand presentation with new packaging, shipping cartons, and relevant marketing materials.

From 2010-2012 the cooperative added six varieties to be marketed under the KBFO name. Having begun to build the brand successfully our growers made the decision in 2012 to add four additional organic potato varieties to be marketed under the KBFO umbrella. These include organic reds, yellows, purples, and russets, making a total of ten varieties to be marketed under a single brand name.

With the formation of a diverse product line the cooperative then chose to re-design the brand and rename the cooperative to include the word “organic” in its name. In 2013 Klamath Basin Fresh Direct became Klamath Basin Fresh Organics. The purpose of redesigning our brand was to give our customers a clear and concise communication of what our products are-high quality organic specialty potatoes-and make the presentation of all ten varieties uniform, competitive and attractive in retail presentations.

The fresh market is competitive and with organic produce we deal with a consumer who wants to know where their product is coming from and who is growing it. Because of our member involvement in the marketing consortiums for the industry (i.e. Oregon Potato Council, United States Potato Board) we are constantly gathering information about consumer trends, successful ways to market potatoes in retail stores, and adhere to the latest research and successes of potato industry research to develop our marketing strategies. At the beginning of this grant period in 2012 sales information being gathered nationally showed peeked interest in value-added products. We used this knowledge to develop a competitive and cohesive brand presentation, which included a new logo, value-added educational packaging, color-coded shipping cartons, and informative marketing tools for tradeshows, in-store demos, and customer presentation meetings.

Our work over the two-year grant period was aimed toward enhancing direct communication with new and prospective customers as well as consumer-direct marketing to ensure a sustainable customer base. The Project Manager worked aggressively to facilitate the transition of the product line from KBFD to KBFO. It was critical that we maintain clear communication and develop good relationships with our retailer customers with regular meetings, promotions, enhancing marketing efforts at national and international industry tradeshows, organizing in-store demos, establishing promotional schedules with strategically chosen retail chains, and designing high-quality POS/POP materials to support marketing efforts.

The purpose of redesigning our brand was to give our customers a clear and concise communication of what our products are-high quality organic specialty potatoes-and make the presentation of all ten varieties-this includes logo, package and shipping box design, product lines, and POS materials-uniform, professional, and more powerful at competing on the shelves with other organic potato brands. Our brand redesign and development of new product line/s will especially enhance our competitiveness nationally as we begin to establish a more widespread customer base nationally and will influence the presence of specialty crops on the shelves in retail stores across the nation.

KBFO received funding in fiscal year 2009-2011 for a project titled "Grower's Seek to Directly Foster Retail Interest in Organic Specialty Potatoes". This project was focused on hiring a Project Manager to market one particular variety called Organic Klamath Pearls. The project segwayed into the first brand organization with the addition of 6 fingerling varieties to the KBFD name. This current grant period led itself to further development of the brand as explained in the prior paragraphs.

PROJECT APPROACH

This two-year grant period focused on organizing and executing the brand re-design and transition from Klamath Basin Fresh Direct to Klamath Basin Fresh Organics. The Project Manager collaborated with a design agency to design a new brand logo, packaging line, shipping cartons, and cohesive marketing materials for tradeshows, industry publication advertisements, sales sheets, and retail displays. KBFO invested largely in advertising, presenting the new product line at the annual Produce Marketing Association tradeshow, organizing promotions and in-store demonstrations with stores carrying the new packaging line, re-designing the website and updating all social media avenues to reflect the transitions.

GOALS AND OUTCOMES ACHIEVED

Our goals when we wrote the grant proposal in 2012 changed throughout the course of the grant period. We initially had a goal to increase business in the food service sector of the industry however, due to the lower price point in this area KBFO found sales to be far more successful by remaining in the fresh market and growing our customer sales here. Because we fill a smaller

niche in the potato industry KBFO and have a high-quality product we have been able to increase our customer base in the fresh market giving us the best returns over the last two years.

We also had the goal to increase our acreage by 15% and due to a drought year and limited natural resources were unable to increase overall acreage despite the growth in demand for our products. The outcome of the grant period has still proven to be incredibly successful as we have lessened the length of our storage season by one-four months depending on the variety, due to increased demand for our products. This has resulted in higher price returns and allowed for more time between seasons to improve farm and shed maintenance planning and performance activities.

Another goal was to increase export business for the cooperative to Asian countries. The cooperative maintained export sales throughout the two year period however due to the inability to expand our acreage were unable to increase export market sales.

BENEFICIARIES

The list of beneficiaries include the family farms/members of Klamath Basin Fresh Organics, land owners in the Klamath Basin, local businesses of the Klamath Basin, certified quality seed-growers across the US, and our regional community of organic growers by contributing efforts in maintaining the local organic land-base.

LESSONS LEARNED

Overall we feel that this project was extremely successful. We were able to develop a new brand and will continue to grow our sales and acreage with this brand recognition. We will continue to implement promotional schedules with certain customers and plan to build on what we have developed in the last two years. We have learned which varieties are selling best and what we get the biggest returns on and will continue to follow industry marketing updates in order to remain competitive and provide our customers with the demand required to fill the shelves of our customers.

ODA-S08 North Powder Charter School Fruit and Vegetable Hub – Final Report

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PROJECT SUMMARY

The Specialty Croups Fruit and Vegetable Hub established a goal to provide an opportunity for small schools to procure and process food items that would not typically be available in rural schools. Through the establishment of a school garden, FoodCorps position, partnerships with local agricultural producers and a farm to school coordinator, North Powder has achieved its goal.

North Powder has developed and continues offering a monthly (weekly) tasting table for students and community members. This tasting table identifies a fruit or vegetable of the month and provides an opportunity for individuals to sample dishes made for the monthly selection. I have included a list of dates and offerings from the 2014-15 tasting table offerings.

- Cafeteria Fruit & Vegetable Tastings
- September 10th –Watermelon Juice (no sugar added) using Hermiston watermelons, Ricotta Goat Cheese made from local goat milk.
- September 17th – Watermelon Cucumber Salad, using Hermiston watermelon
- October 9th – Potato Wedges, using local potatoes
- October 13th – Greek Potato Salad, using local potatoes
- October 20th – Raw Winter Squash Salad, using local squash and apples
- October 21st – Baked Potato Bar, using local potatoes
- October 28th – Crunchy Potato Salad, using local potatoes
- November 7 th – Pumpkin Hummus and Carrot Chickpea salad, using kitchen ingredients
- November 20th – Roasted Root Vegetables
- November 25 th – Potato Salad, using local potatoes
- December 8 th – Cranberry Apple Salad
- December 16th – Cranberry Salsa
- January 12th – Raw Winter Squash Salad, using squash from school garden
- January 22nd – Garlic Parmesan Roasted Broccoli
- January 29th – Apple Waldorf Salad
- February 6th – Broccoli Apple Slaw
- February 13th – Apple Bulgur Hot Breakfast Cereal
- April 10th – Bulgur Pear Hot Breakfast Cereal
- April 17th – Pear Orange Smoothie

- April 24th – Pear Cabbage Slaw
- April 30th – Pear Sunflower Seed Dip
- May 26th – Asparagus Guacamole
- June 1st-4 th – Mixed Fruit Sorbet served in K-6 th Grade classrooms
- June 18th - Strawberry Banana Smoothie served at breakfast
- June 25th - Green Smoothie served at breakfast Ingredients: frozen mango/pineapple/papaya, banana, green grapes, spinach
- July 2nd - Berry Smoothie served at breakfast Ingredients: strawberries, bananas, blueberries, baby kale, baby spinach
- July 9th – Banana Zucchini Smoothie

Involved Agricultural Science students, elementary students, community members and teachers in helping grow and harvest crops from the farm to school garden.

Our Food Corp representative spent 62 hours providing classroom instruction to K-6th grade students on garden activities, math activities using garden materials, nutrition and cooking and craft activities.

PROJECT APPROACH

In 2014, Oregon Specialty Crop's (SC) were served to an average of 288 student's daily dependent upon availability at North Powder Charter School (NPCS). 1035 pounds came from Union County, and 428.8 pounds came from Baker County, 965 pounds came from Umatilla County, and 2050 pounds came from Grant County. Oregon SC served was watermelons, cantaloupe, pluotts, peaches, potatoes, apples, pears, and winter squash. In 2015, Oregon Specialty Crops were mserved to an average of 281 students daily. North Powder's School Garden provided 963 lbs of produce. North Powder procured 1047 pounds from union county, 1,503 pounds from Umatilla County, 1381 pounds from Grant County and 434pounds from Baker County. This comes to a total of 5,213lbs or 2.6 tons. The bench mark remains zero and 4.85 tons out of 5 was procured. North Powder Charter School, LA Grande School District and Joseph School District are active in using Oregon SC's. 281 students at NPCS participate in monthly taste tests. Oregon SC fliers went home monthly. Weekly phone calls, emails, and contact with neighboring school districts are ongoing. The regional superintendents will be meeting to iron out the details of the food distribution hub with Organically Grown and Bill Lakey. Holiday dinner in December featured student grown Oregon SC that was prepared by 281 students that featured Oregon SC pumpkins, squash, beets, and apples. Meal was served to 467 community members. Students used pumpkins that they processed after growing them in the school garden and froze them for later use. 7 community members and 27 staff assisted with the preparation and production of our Annual Holiday dinner.

Progress has been made to bring DOD to Eastern Oregon. Area schools have requested to take part in the fruit and vegetable program that is offered by DOD. With the increased demand of DOD, the need for Oregon SC is greater.

GOALS AND OUTCOMES ACHIEVED

Continue to work in order to source Oregon Specialty Crops.

- To date North Powder has supplied over 9,691.8 pounds of specialty crop produce

Expand purchasing power for rural area schools.

- Small and local grower partnerships have been established.

Provide time and staffing for procurement and developing partnerships.

- We have hired Erin Thompson as the new farm to school coordinator.

Increased storage area for produce.

- North Powder has developed and completed a local cold storage area.

Educating food service personnel, students, community members and small growers on growing and marketing.

- North Powder has maintained its Food Corp position and provides hands on education in the school garden, as well as applicable education in the classroom and community.

Work with larger distributors in order to bring produce in from the Willamette Valley.

- North Powder has currently established a partnership with distributors in order to initiate this process.

BENEFICIARIES

Local farmers, students, community members, North Powder School District, educators, Farm to School program, Agricultural Science program, Oregon distributors, and Oregon Department of Agriculture.

LESSONS LEARNED

Distribution to small rural schools in Eastern Oregon is difficult due to the location of schools. Larger food service companies require drop sizes of 40 cases or $500 minimum. Small growers are working on co-opting together and are targeting schools, but the increased cost for their product has to be considered. Lettuce from local growers was offered, but at $5.45/lb. Current purchase of lettuce in a 5 pound bag from a larger Food service company costs schools $4.13/bag. Educating growers at reasonable market values is on-going. Food service directors are limited on time and staffing needs are to be considered when dealing with fresh produce.

However, there is a bright spot on the horizon. After several conversations with Bill Lakey from the Organically Grown Company, North Powder is extremely close to having a food distribution hub in our region. Bill has 3 trucks of produce a week going by North Powder and Baker. Bill is willing to sell produce at cost if we can get the regional school districts to consolidate their orders and purchase $200.00 or 5 cases of goods. Bill would then have the trucks drop ship them

to one central distribution point for schools to pick up. This is what a large portion of the original food hub was designed to accomplish.

ODA-S09 Enhancing International Business Capacity for Oregon Specialty Crop Processors: Gateway to the Asia-Pacific Market– *Final Report – Revised March 04, 2016*

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PROJECT SUMMARY

The goal is to grow both outbound export capability and inbound access to international trade and process knowledge. This will enable Oregon specialty crop value-added processors to identify markets and competitive methods and processes that will enable them to compete globally. Besides a focus on export capability, an outward look and access to technologies from other regions of the world is essential. Processors must adjust their business models and invest in plant and equipment to maintain their globally competitive positioning.

The project is important and timely because it builds the knowledge base for the food processing industry to compete internationally. It responds to a gap in international business competency reported in NWFPA's 2011 industry-wide survey. Seventy-four percent of survey respondents identified barriers to export as a concern. Over 50 percent of those surveyed identified international trade as a critical emerging issue. This project is designed to enable specialty crop processors to compete smartly rather than simply on cost.

As global competitive pressures increase, so do opportunities: 95 percent of the world's population and 70 percent of the world's purchasing power reside outside the U.S. For value-added specialty crop products, this represents an exceptional export opportunity. Nationwide under 15 percent of total food processing sales are export. Similarly, according to the Business Oregon website statistics, Oregon food processing accounts for only $241 million in exports in the $13.21 billion agricultural cluster output. These small export numbers demonstrate a clear opportunity for growth.

While NWFPA is the trade association long representing Oregon specialty crop processors, international business/export traditionally has not been a core competency of NWFPA. However, as global competition has increased along with more diversification and ethnicity of food production, all companies are looking for new markets. Oregon specialty crop processors, characterized by small and medium sized enterprises, separately cannot afford to grow these capacities – it is important for them to work collaboratively. The NWFPA Board of Directors has directed staff to develop capacity to assist in accessing existing outside international business resources through various electronic and printed communications as well as educational events.

PROJECT APPROACH

Activities completed as a means of achieving the goal included:

1. Conduct Interviews to Clearly Understand Producers' Barriers to Export
    - √ In 2013, we conducted personal interviews of Specialty Crop Producers' leaders and sales teams enabling us to understand real and perceived barriers. With this understanding, we identified the key topics we must address to enable receptivity to export education and potential for implementation.
2. Establish Connection with Partners, Resources and Exporting Producers (Peers)
    - √ Meet partners and understand the programs available across Oregon including ODA, WUSATA, DoC, Business Oregon, SBDC, banks, private firms etc.
    - √ Provide means for all Partners, public and private, to share their expertise (see Access to Resources below)
    - √ Find exporting producers willing to participate as peers, willing to share their stories, tips and best practices of exporting. Find producers willing to have their staff and operations areas videotaped.
3. Design and Conduct Workshops and Sessions on Export
    - √ EXPO Jan 15, 2013: Session "Expand Your Export: Strategies and Action Planning "– 28 attendees.
    - √ EXPO Jan 14, 2014: Session #1: "Strategies for Starting or Increasing Exports" by ODA and John Spiers. 20 attendees. Session #2: "Avoiding Barriers to Export – Financial and other Hurdles". Dave Lakey, President Oregon Fruit Products keynoted with his Asia Pacific success story. Presentations by Banner Bank Agri-Business VPs and WUSATA. 22 attendees.
    - √ Non-Portland Export Workshop – Eugene Oregon. October 23, 2013 with Eugene Chamber of Commerce, ODA and WUSATA. Five producer attendees.
4. Create and Distribute Export Guidance Documents: Export Roadmaps and Guides
    - √ Design, create and publish "Roadmap" (22 page document) on "So you want to Export", Guide to Resources Summary and Guide to Resources Details.
    - √ Distributed print copies of these documents at EXPO January 2014, and January 2015. Available for download on NWFPA website.
5. Provide Producers with Access to Resources (public and private)
    - √ Resource Area in EXPO Tradeshow floor with 14 partner tables at EXPO Jan 2013 and EXPO Jan 2014.
    - √ Birds-of-A-Feather luncheon provided on the tradeshow floor EXPO Jan 2014.
    - √ EXPO Jan 2015 Export table in registration area. Promotional videos shown to provide awareness of upcoming EXPORT READY video series. Also represented partners (ODA, Bus Ore. SBDC, DoC) with their programs and seminar schedules. Distributed Roadmaps & Resouce Guides.
6. Establish International Pavilion at EXPO

- √ Tradeshow floor area designated for booths involving International trade EXPO January 2013 and EXPO January 2014. Thirteen to Fourteen (13- 14) booths were filled during both events.

7. Design Curriculum, Produce and Publish Export Training Video Series with Quizzes
   - √ Develop promotional videos for EXPO Jan 2015
   - √ Develop introductory video to describe "how to use this series".
   - √ Design export curriculum content, subject matter expert. Conduct individually designed interviews. Film interviewees & b-rolls; video production onsite
   - √ Design quiz questions to embed in video and create separate docs for each.
   - √ Arrange video clips, edit for content and publish videos with embedded quizzes
8. Design and implement website area for EXPORT READY Training with Tracking.
   - √ Design, implement, test and publish site for all videos and docs.
   - √ Create method for tracking views and distributing Certificates of Completion
9. Build Database of Oregon Specialty Crop Producers
   - √ Over the 2+ years, we gathered names of 217 Specialty Crop companies with individuals' emails. We also gathered 207 company names without emails. NWFPA and others will use the emails. Both lists will be useful in the follow-on OMEP SCBG grant. Some partners agree to forward messages to their lists.

GOALS AND OUTCOMES ACHIEVED

Target: After 4 educational events, at least 20 specialty crop processing companies report increased export understanding and capability, and at least 4 have begun to export, or have increased export sales by over 10% from 2012 to 2014.

Performance Measure: The October 2014 survey over the Oct 2012 survey.

Given the goals and outcomes set out to be achieved by this project NWFPA was unable to determine if targets were achieved by the end of the grant period. This said NWFPA learned that more foundational education was needed to get the type of results anticipated. Within the initial survey results of 2012 had been underwhelming. A total of 32 companies respond showing 75% currently export. A secondary question asked approximately what percentage of their revenues are generated from international exports with a total of 11 responses showing that 6 of those 11 had less than 10% of total revenues from export. Of the 11 responses 6 also indicated they have intent to increase export volume and revenue in the near future. The last question ask if they would engage in or increase export activities if they had access to support and resources; 7 out of 12 respond indicating yes.

While executing anticipated activities it was learned that the intended strategy and focus of the project needed to change toward email and online interaction to build greater export awareness to meet the need of the industry for better results and adoption.

All the activities completed during this grant project were in support of the final goal, with the qualitative goal of increasing the awareness, education and interest in exporting for expanded revenues and global competitiveness. Goal: Increase the number and amount of Oregon specialty crop exports enabling processors to remain globally competitive.

The outcome for the project will be measured over the next 18 months. The target outcome is to ensure at least 10 individuals view the EXPORT READY Video Training and at least 4 individuals will complete all 15 episodes. Each episode includes online and downloadable quiz questions. By completing the 15 episode series and quizzes, the viewer receives a Certificate of Completion from NWFPA. The viewership will be tracked by the website, providing a count of viewers and Certificates.

Please see results and lessons learned within the Lessons Learned section of this report.

BENEFICIARIES

The primary beneficiary of this project are the hundreds of Oregon Specialty Crop manufacturers of food and beverage products, who have the untapped potential of greatly expanding their marketplace through international sales.

These companies include those who provide branded, ingredient and/or food service categories, all of which are in increasing demand by foreign buyers.
Being a traded sector, the secondary benefits are those who benefit from the growth in economics for the state, increase in family wage jobs and reduction of community poverty levels.

The State of Oregon's Business Plan specifically calls for these goals in all traded sectors.
The Portland metro economic region benefits significantly from this project. However, it is important to note that rural parts of Oregon comprise the majority of the fruits vegetables and tree nut producers by virtue of the farm-based nature of many companies. In addition, a large percentage are privately held, often family-founded.

These rural locations are sometimes under-represented in face-to-face seminars. Thus, the virtual nature of EXPORT READY as videos will make export training accessible to rural companies. Being virtual, teams at companies could watch the videos as a group. And, training can occur at convenient timeslots. There is a new SCBGP grant with the Oregon Manufacturers Extension Partners who are partnering with NWFPA. OMEP and NWFPA will directly reach rural based Specialty Crop Producers to build export capability across Oregon.

LESSONS LEARNED

During this project, lessons learned fell into the following categories:

1) Find and know thy audience, understand their real and perceived barriers & plan the approach. This was critical to design of the workshops, documents and video content. It is critical to

understand the grant timeline compared to the seasonal cycles of specialty crop companies. NWFPA learned that the time period for deliverables and interaction for building export education was poorly timed resulting in low response and turnout. It was also interesting to find how little companies understood about export or that it wasn't even part of management or strategic discussions. NWFPA went into the project assuming initial interest was greater and the understanding of there was a greater export awareness. This led toward midstream evaluation of project approach an the decision to take a step back and build greater awareness and interest instead of flooding companies with knowledge they had been foundationally unprepared to receive.

2) Plan and manage the project to scope, schedule and cost. Include partnership involvement and team member learning curves. Consider executives' availability especially regarding harvest seasons. Scheduling caused unexpected delays.
3) Apply current strategies for adult learning, retention and implementation of changes. It was decided to refocus our strategy to use online methods and phone conversations to build interest. It appears that time is very limited and difficult for company representatives to travel away from manufacturing operations to learn about export opportunities, developing these materials takes time and results can be hampered based on a grant proposal time line.
4) Offer individuals a toolbox of resources (public and private). Offer access to financial and operational resources, potentials for outsourcing (co-packers), options for export & food consultants, selecting freight forwarders, and locally-based representatives of foreign food trends/tastes. 5) Important note: It is not companies who export, it is individuals. Additionally, the CEO and the international sales person must be in sync.
5) Export projects should be taken with a much longer view of implementation. It takes time to get companies comfortable with the idea of exporting products. Since the posting of the online training video the following surveyed companies have given these results as a component of the long term tracking results:

    - 82 total respondents as oppose to the original 32 in 2012 which indicates a stronger interest.
    - 31 of the respondents indicated that over 10% of company sales are international and plan for continued growth.
    - 27 of the respondents indicated that less than 10% of the total sales are international, but plan to grow export.
    - 7 respondents indicated a very small percentage of sales is international and do not anticipate growth.
    - 9 indicated no international sales

- And the last 8 don't know.

In conclusion over time interest has increased and companies are pursuing export more than was previously indicated in 2012. We also see a larger number of companies that have international sales over 10% of total sales than in our 2012 survey.

Understanding the best way to reach the audience and not underestimating the base knowledge is key in export projects.

ODA-S10 Growing an Oregon Mint Brand– *Final Report*

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PROJECT SUMMARY

Oregon once led the world in mint oil production. In the 1990s the industry took a hit when companies began using synthetic flavors or cheaper oil blends from India and China. 45 percent of the mint oil produced in the USA is used for flavoring chewing gum with another 45 percent used to flavor dentifrices (tooth paste, mouthwash, etc.). The remaining ten percent is used for flavoring in the confectionary, pharmaceutical, liqueur and aromatherapy industries.

The main objective of this project is to raise awareness of the high quality of Oregon mint oil. Through an integrated campaign the branding would enable us to effectively communicate the appropriate messaging, increase demand and link directly with the industry's national association.

PROJECT APPROACH

In cooperation with the Oregon Mint Commission we began by creating a brand image that provides awareness and recognition for Oregon mint. The new branding was used in the promotion of the Oregon Mint Growers annual meetings, in which all major national buyers were present, including on the program, registration mailing, nametags, sponsor signs, PowerPoint presentation and lanyards for both the annual meeting and other events that Oregon mint participates in. The logo was also added to letterhead for the Oregon Mint Commission and used on the industry newsletter, assessment reports, etc.

Using the new branding logo and design a new website was created www.oregonmint.org. This website is designed to educate manufacturers about the quality of Oregon mint oil and also provide consumers with industry information, recipes and tips. The recipe section was created in cooperation with internet bloggers who posted mint recipes on their own websites and allowed the OEOGL to post the recipes on our site giving original credit to the blogger and include a link back to their website. This portion of the site will be an ongoing piece with new recipes being added throughout each year.

Educational brochures were created using the branding logo. These brochures are targeted at consumers educating about Oregon mint and the process to create mint oil for consumer products. We have printed more than 5,000 brochures.

A retractable banner was also created and used at meetings and events promoting the high quality of Oregon mint oil.

The Oregon Mint Commission and Mint Industry Research Council provided images and data that were used on the website, brochures and retractable banner. The Oregon Mint Commission also provided a cash match for the project.

GOALS AND OUTCOMES ACHIEVED

The following activities were completed to achieve the goal of this project to create an awareness of the benefits of Oregon grown mint and a stronger presence in new markets:

- Brand development including a brand image that provides awareness and recognition for Oregon mint.
- Implemented new branding image to promote Oregon mint and the Oregon Mint Commission.
- Designed and created a website that educates manufacturers about the quality of Oregon mint oil.
- Collaborated with food bloggers and websites to provide mint recipes for the website.
- Compiled industry photos to be used for branding, website and promotional materials.
- Designed, created and printed an educational brochure targeted at consumers regarding Oregon mint and the process to create mint oil.
- Designed, created and purchased a retractable banner to be used at meetings and events promoting Oregon mint.
- Surveyed first purchasers, manufacturers and flavor houses as to the awareness and benefits of Oregon grown mint.
- Compiled movement and price data from the Oregon Mint Commission to measure performance.

The 2010 Oregon mint crop was valued at close to $35.6 million (NASS Stat). Our target was to increase the movement of Oregon mint oil and with a modest increase in price we would see a potential economic impact of 1 – 1.5 million dollars.

In 2013 the Oregon mint crop was valued at $44.9 million with the price per pound of oil at $24.30/lb (NASS Stat). Although all of the data is not compiled for the 2014 harvest it is projected to far out perform the 2013 mint crop with the price per pound of oil reaching upwards of $28.00/lb.

BENEFICIARIES

Oregon has approximately 250 mint growers, as well as eight mint handlers and value added producers who have benefited from this project.

Based on data from USDA NASS February 21, 2014 mint oil price per pound and value of production for Oregon in 2011 was $23.40/lb, these numbers are historically conservative. Based on assessment reports from the Oregon Mint Commission production numbers have remained pretty constant throughout the grant period with only a minor increase in lbs of oil produced. Through USDA NASS reports and direct communication with the first purchasers of mint oil as well as the manufacturers and flavor houses we found that the price per pound has consistently increased each year with a conservative average of $25.50/lb for the 2014 harvest year. This is an economic impact of a nine percent increase in value of Oregon produced mint oil.

LESSONS LEARNED

The work group experienced several delays and found that many of the activities scheduled in this project took longer than originally intended. We found that we needed to provide a greater oversight on the project to make sure items were completed in a timely fashion. However, as we went through these delays we also found better ways to complete some of the activities we had planned.

The social media component completely changed from the original conception of this branding program, one lesson that we learned and feel it is important to consider when starting a social media presence is to have a plan for how you will continue that presence once the grant has finished. We eventually found that through collaboration with food bloggers we could begin, and more importantly, continue a modified presence.

With major buyers we clearly learned the importance of quality and stability in our messaging, which clearly contrasts with the reputation of competing oils from both China and India.

ODA-S11 Promoting Oregon Public Hop Varieties to Oregon Craft Brewers – *Final Report*

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PROJECT SUMMARY

The overall goal for this project was to promote Oregon grown public hop varieties to craft brewers and home brewers and change the direction of the rapidly declining hop acreage in Oregon. The Oregon Hop Commission attended many home brew competitions and fresh hop brew festivals over the last two years, educating brewers and the general public about Oregon grown hop varieties and the differences between hop varieties released from the public breeding program and hop varieties released from private hop breeding programs. In 2013, the USDA and WSU public breeding programs released four new public hop varieties that many craft brewers are very excited about and acreage of those hops is currently increasing. The U.S. hop industry is excited to have a renewed interest in the public breeding programs with the expansion of many craft breweries around the country. Since this project began in 2012, Oregon aroma hop acreage has increased by over 12% and much of the acreage is going to craft brewers in Oregon and throughout the U.S.

PROJECT PURPOSE

The purpose of this project was to educate Craft Brewers, Home Brewers and the general public about publicly available hop varieties grown in Oregon and promote the quality and sustainability of Oregon grown hops. Our ultimate goal was to sell more Oregon hops to Oregon brewers which would in turn increase the demand for Oregon Hops.

Oregon is currently the second largest producer of hops in the United States. Producing nearly 15% of the hops grown in the United States. Over the last few years, many changes in the brewing industry have greatly affected Oregon hop production. The consolidation of large brewers along with a worldwide oversupply of hops has led to an acreage decrease of 33% since 2009. Oregon is in danger of losing more acreage in the future as many of the grower's contracts expire in 2012 and 2013. If contracts are not renewed, growers will have to take acreage out and replant with another crop.

Hop varieties developed by the USDA Hop Breeding Program (Public Hops) make up about 95% of the hops grown in Oregon. Just two public varieties, Nugget and Willamette, make up over 59% of the Oregon hop crop. With almost 60% of the hop acreage in Oregon planted in Willamette and Nugget varieties, it is of critical importance that brewer demand for these and other public varieties is maintained and enhanced.

Over the last ten years there have been at least three private hop-breeding companies established. These companies control every aspect of the hop varieties they release, including who grows and sells them. They also have the resources to promote those private varieties to brewers. Anyone can grow and sell hop varieties released from the public breeding program. Currently there isn't a program established to promote the use of publicly bred hop varieties.

This project is timely because the OHC had received a grant of $50,000 from the Hop Research Council to assist in breeding public hops. The HRC grant will increase the number of potential new public hop varieties being tested in commercial research plots located in Oregon. It general, it takes up to ten years to breed a new hop variety and we are hoping to shorten that window and increase our chances of finding a great new variety by planting out over 5,000 different selections in our research plots. We currently have a lot of momentum in the public breeding program and wish to use this pilot project to establish a program to promote the use of public varieties.

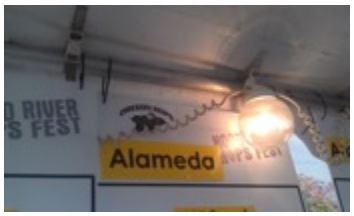
Another reason this project is timely is it allowed us to expand upon the Specialty Crop Grant that we received in 2011. We developed a Oregon Hops trade show booth and educational and promotional materials that we used at the Fresh Hop Beer Tastivals and other events throughout Oregon.

PROJECT ACTIVITIES

We introduced this new pilot project at the Oregon Brewers Guild annual meeting in December of 2012. The OHC also partnered with the Oregon Garden for the Brewfest and presented information about this project at their Brewer's Dinner on April 25, 2013. The Oregon hops promotional display was also on display at the Oregon Garden Brewfest April 26-28, 2013.

After the Brewfest, the OHC confirmed the breweries that would participate in this project for the 2013 & 2014 Hood River, Portland and St. Paul Fresh Hop Beer Festivals. During the festivals we put the Oregon hops logo next to each of the beers that were made with Oregon hops. The commission also had an educational and promotional booth at each of these festivals where we took 9 different public hop varieties to rub and sniff. In 2013 & 2014 festivals we showed our Oregon hop industry video, handed out Oregon hop industry brochures and water bottles and bottle openers with the Oregon hops logo on them. For part of the booth we used the pop up display that we designed using our previous specialty crop grant. We received many compliments about our display from the brewers as well as the attendees of the event.
With our time extension of this grant, we were also able to produce "spring hop field activities" and new "hop harvest" educational videos to take to use in our booth in future years and post to our new website and facebook page. In these videos we focused on family hop farms in Oregon and all of the hard work that goes into growing and harvesting Oregon hops. We also updated our display booth retractable banners that show the harvesting process and teach people about

hop history and interesting Oregon hop facts. Our previous banner weas from 2012 and the acreage number and hop varieties have changed so much that they were in need of updating.



The commission also reached out to home brew clubs with this project and participated in the Oregon Brew Crew Fall Classic in 2013 & 2014 and competitions with the Strange Brew Club, Heart of the Valley Brewers Club and Central Oregon Home Brewers Association. Having a presence at these events has strengthened our relationship with the local home brewers and in the future we plan on having them do some brews with some of the experimental varieties.

After attending these events in 2013 it was obvious that the commission would benefit more by designing a new electronic version of the hop variety manual versus our original plan of re-designing the printed manual. The Field Group of Yakima, WA designed our new website and also did some research with breweries from around the country to develop a promotional plan for Oregon hops. They also redesigned our logo and made new business cards, letterhead and envelopes with the new logo.

ADDITIONAL INFORMATION

The OHC administrator spent approximately 740 hours working on all of the details of this project since 2012. As the commission does not have a very large budget they choose to use the administrators time as a cash match in most of the grants they are awarded.

The hops sold/donated/traded to the breweries making fresh hop brews proved very hard to keep track of so included on the tracking form is an estimate of how many pounds of hops were used, one of the calculations that we came up with is that there is an estimated 7 pounds of fresh hops in each barrel of beer produced and there were at least 60 fresh hop brews at each festival. So if each brewery produced 50 barrels of fresh hop beer that would equal an estimated 21,000 pounds of fresh hops provided by Oregon growers. Since there are so many “handshake” deals when it comes to fresh hop procurement, I have learned that I will not use this as a measure in the future as it is very, very hard to measure. We also used the Oregon Brewers Guild advertising budget for the Fresh Hop Beer Festivals as a cash match but was told later on that we probably didn’t need to use that.

The OHC now has a newly redesigned website with updated hop variety information and social media presence. We are now on Facebook and Twitter and our website is now mobile phone and tablet friendly at www.oregonhops.org

Our new logo:

OREGON HOPS

GOALS and OUTCOMES ACHIEVED

One of our goals for this project was to help the struggling Oregon hop industry increase acreage and hop production after acreage had been on the decrease from 2009-2011. Since this project began in 2012 Oregon hop acreage has increased by 12%, and many of the varieties planted have been public hop varieties. The benchmark for the project was to increase the total pounds of Oregon public varieties produced by 5%. Attached is the 2014 U.S Hop Industry Stat Pack, page four shows the acreage for Oregon for the past five years and page seven shows the pounds of hops produced. As you can see from the report, acreage has increased steadily since the project started in 2012. There was also an increase in pounds produced from 2012 to 2013 but a slight decrease from 2013 to 2014. This decrease is due to a poor crop year in 2014, yields were down as there was more disease pressure than in previous years. Also, many of the acres planted are still maturing as it takes 2-3 years for a hop plant to be at full production. With acres increasing again for 2015 and more of the acres planted in 2012-2013 coming into full maturity, the pounds produced and sold in 2015 should increase well over our goal of 5%.

BENEFICIARIES

First, are the twenty-two Oregon hop growing families, followed by the large community of Oregon craft brewers, Oregon Brewers Guild and Oregon home brewers. The hop growing suppliers, hop merchants and the rural communities that the hop growing families support also benefited from this project. The U.S. hop industry public breeding program received some much needed promotion as a result of this project. We will continue to promote this program in the future and hopefully the result will be many new successful public hop varieties.

LESSONS LEARNED

The goal to increase Oregon hop acreage was definitely met and with the help of the quickly growing craft beer market, acreage is still on the increase. The hop varieties that growers are producing now are a little lower yielding especially if there is increase disease pressure during the growing season. These lower yielding varieties, young hop yards and high disease pressure in 2014 did lead to a decrease in number of pounds produced in Oregon from 2013-2014, as a result the benchmark that we set was not met. However, with the continually increasing acres I am confident that Oregon growers will exceed a 5% increase in pounds produce in 2015, given that

it is a good crop year.

With the administration of this project I learned that even with an increase in acreage each year, that does not necessarily lead to an increase in number of pounds of hops produced. Every crop is effected by mother nature and if the growing conditions are not favorable for that particular specialty crop, that can lead to a decrease in production.

I also learned that it is not possible for the Oregon Hop Commission to participate in each of the fresh hop brew festivals around Oregon. Fresh hop beer is only available for a limited amount of time so many of the festivals around the state take place on the same weekend for that reason. We chose to participate in the larger festivals in Hood River and Portland as they are not on the same weekend and also in our "hometown" festival in St. Paul which was established in 2013.

Much our travel budget was not utilized because we were unable to attend each of the festivals. If we had more than one educational/promotional display we may be able to participate in each of the festivals but I'm not sure that we would have enough volunteers to staff them since we only have one paid employee.

With the addition of the new website, social media and two new Oregon hop production videos, the commission has become more visible on the internet. At the same time I am learning that keeping up with all of the social media and website updates is also challenging for an office of one.

This was the OHC's second specialty crop grant and one of the most challenging to administer. It was difficult to make estimations of how many pounds of fresh hop were being traded/sold/donated to the different breweries that participated in the festivals. So much of the fresh hop business for growers has been a "trade" agreement with brewers in the past but is now becoming more formal as many more breweries are making fresh hop beer and some hop varieties are in short supply.

Activities for this project took more time than I estimated because there ended up being so many changes to the scope of work, which is why we extended it another six months. When the OHC first came up for the budget of this project, we estimated the best we could but still ended up with a little over $2,5000.00 remaining in the budget. Had I known we would be that far off I would have tried to re-allocate it, I will keep better track in the future.

The forms that they ODA have provided for tracking have also improved greatly since I first started on this project so this will help in tracking all of the details. I also learned that my salary and benefits which are used as matching funds in most of the grants that should be tracked as cash matching instead of in-kind matching funds.

ODA-S12 Oregon Institutional Food Purchasing Project – *Final report*

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PROJECT SUMMARY

The purpose of this project was to coordinate institutional food buyers (healthcare, education, government, non-profit, and business) through a regional network to create an increased, consistent demand for Oregon Specialty Crops and send strong market signals to producers and suppliers to increase supply. Through baseline measurements the project identified 11 target specialty crops that were purchased by institutions and presented opportunities for shifting purchases from purchase from outside of Oregon to increasing purchased from Oregon producers. Through farm, food distributor and processor tours, project coordinators raised awareness about crops grown in Oregon, increased interest and support for purchasing from Oregon producers, and identified growers that could serve an instituional market. Tracking tool development, educational resources, marketing tools, and technical assistance was provided throughout the project to increase engagement and project success.

The institutional food buyer sector represents a huge untapped market opportunity for the Oregon Specialty Crops that currently account for 60% of Oregon farms' gate value. By driving demand in this sector, this project helped make it easier for farmers to secure reliable and consistent markets, and encourage buyers at other scales of business to access Oregon Specialty Crops through traditional distribution networks. This project was especially timely. Our goals were identified by Multnomah County residents in the *2010 Multnomah Food Action Plan* (Action 15, Goal 15.4) as being critical to achieving a thriving local food economy. Our project also builds on the significant momentum and the experience of participating regional institutional food buyers who have been working to improve the health and sustainability of their food service operations by directing more of their purchasing dollars to local agricultural producers.

PROJECT APPROACH

To accomplish Project objectives we developed and convened the Institutional Food Buyers Alliance and related Advisory Board, engaged participating buyers in a collective Specialty Crop purchasing project and held related educational and market engagement activities. Specific activities and achievments included:

<u>Institutional Food Buyers Alliance and Advisory Board Meetings</u>

- Convened five quarterly Institutional Food Buyers Alliance (IFBA) meetings to present information, data, and encourage participation on the Institutional Food Purchasing Project (IFPP) (January 2013, May 2013, October 2013, April 2014, July 2014). A sixth IFBA meeting is planned for, including presentation of project outcomes for fall, 2014. All

meetings were planned by IFBA Advisory Team and coordinated by Multnomah County Office of Sustainability (MCOS) and Oregon PSR.

- Held vendor fair in place of spring 2014 IFBA meeting to highlight Oregon grown products and specialty crops. 12 vendors participated and 33 individuals from Oregon institutions attended this well received event. Both buyers and vendors appreciated the intimate venue.
- Convened seven quarterly IFBA Advisory Team meetings to report out and plan for next steps for the IFPP (December 2013, March 2013, October 2013, November 2013, March 2014, June 2014, September 2014). Advisory Team members included: Ecotrust, Oregon PSR (former members included Oregon Environmental Council and New Seasons).

Purchasing Project Participation

- Following January 2013 IFBA launch meeting 10 institutions indicated interest in participating in the project – Centennial School District, ElderHealth& Living, Kaiser Permanente, Mary's Woods at Marylhurst, Multnomah County Corrections, Oregon Convention Center, Oregon Health & Science University, Portland Public Schools, Providence Portland Medical Center, and Willamette View Retirement Living.
- Oregon PSR developed a collection tool (see **Appendix E**) and collected baseline data from 8 of these institutions.
- Purchasing Road Maps were also completed by participants identifying their preferred purchasing methods (direct vs. through distributors) and providing contact information for their suppliers and distributors. With this information a letter was developed and sent to their common suppliers describing the project and enlisting their support and cooperation for purchasing goals.
- Oregon PSR and Multnomah County Office of Sustainability provided ongoing support and technical assistance to project participants to baseline, goal set and track purchasing changes.
- At the end of the project period seven participants provided purchasing data to evaluate the impact of the changes they had made as a result of the project. Results are reported in next section.
- At the end of the project, participating purchasers and participating food distributors/ suppliers were asked to complete and online survey to evaluate project success and impact. Results are reported in next section.

Marketing, Educational and Tool and Material Development

- Oregon PSR developed an Excel based purchasing tracking toolkit for participants to use. (See **Appendix F**)
- Oregon PSR created 11 target crop factsheets providing basic crop information, nutritional information and Oregon agriculture statistics. (See **Appendix G)**
- Oregon PSR created a list of large scale target specialty crop producers in Oregon that could supply an institutional market with help from the Oregon Strawberry Commission, FoodHub, and Oregon Hazelnut Commission.

- Working with Oregon Department of Education Oregon PSR modified 7 Oregon Harvest for Schools posters for use in institutional food service operations (Oregon Harvest for Institutions) and made available as PDFs and InDesign files to participants at and after the July 17th IFBA meeting

GOALS AND OUTCOMES ACHIEVED

Procurement Changes

Drawing a Basline and Selecting Target Crops

In the spring of 2013 eight institutions reported baseline data on their local purchasing of a number of crops commonly grown in Oregon and purchased by institutional food service. From the baseline data 11 target crops were picked to focus Oregon grown purchasing efforts on: *blueberries, cranberries, hazelnuts, strawberries, broccoli, carrots, green beans, lettuce, onions, potatoes and zucchini* . These crops were chosen because participants saw an opportunity to either shift their purchase to Oregon producers, increase their overall purchasing of the product with menu changes. A summary of this Baseline can be found in **Appendix A**.

Aggregate Procurement Impact

As a group, the participating institutions set a goal to collectively increase Oregon grown purchases of target crops by 5% of their total purchase of that product category. At the end of the project these institutions were asked to provide comprehensive purchasing data for the 15 month project reporting period from June 2013 – August 2014.

Data interpretation: Six buyers provided comparable data for pounds of product purchased, that when aggregated and normalized for an average purchasing month, could be compared to their baselines to assess impact. Our measurment approach deviated from that planned, because not all buyers were able to provide data on total purchase (Oregon Grown and other) - so we were not able to look at how their Oregon Percentages of Purchases compared from baseline to end of project. However, we were able to assess the increase in pounds purchased of target crops over their baselines – both for individual buyers and in aggregate for the group. We were also able to assess the percentage increase in purchasing of these target crops. We were not able to directly assess economic impact because purchasers were limited in their ability to share both amount purchased and unit price due to contract agreements with their suppliers. A summary of the complete purchasing reported by projcect participants can be found in **Appendix B**.

Based on final purchasing data gathered in September 2014 the following purchasing changes in the 11 target crops were seen:

- Overall the *average monthly pounds purchased* of the 11 target crops by reporting institutions increased almost three fold from 12,408 lbs to 32,250 lbs.
- The *percent increase in average monthly purchase of Oregon grown target crops* increased dramatically in large part because facilities focused purchasing on crops that

they had not previously purchased or purchased much of from Oregon growers: blueberries=358%; Hazelnuts=165%; Strawberries=69%; broccoli=339%; green beans=32%; onions=413%; potatoes=100%. For several crops no baseline Oregon grown purchases were reported and for each significant volume purchases were reported (cranberries, carrots and lettuce).

Knowledge Increase

Education & Farm Tours

Three farm, distributor, and processor tours were held in July, August and September of 2013 in place of a normal quarterly IFBA meeting. A total of 38 individuals from 7 institutions attend one or more of the tours. Tours: 1) July 25th – Tour of Siri and Son Farms and Organically Grown Company, a regional produce distributor. 2) August 15th – Tour of NORPAC farm and processing plant. 3) September 10th –Tour of Stahlbush Island Farms. Outcomes: Tours provided many a first look at the inside of a produce distributor, processing plant and out in large production fields. Positive feedback was provided by all attendees and some institutions started purchasing relationships with tours sites as a result of participation. Many attendees did not know that NORPAC, one of the tour sites, provided such a high level of Oregon grown products, many indicated interest in utilizing their product in the future to access Oregon grown produce.

Culinary Training

Coordinated a one day three part culinary training on August 28th 2013. The training was held at Oregon Convention Center who donated space, lunch, some food for the trainings and staff time. Thirty individuals from 8 institutions attended the full day training. Training curriculum was developed and delivered by David McIntyre, chef and former chef instructor. He also utilized community partners Providence Portland and Rouxbe cooking school to help with training delivery. Training components included: Year Round Use of Oregon Products; Innovative, Healthful Techniques for Using Oregon Grown Products; Train the Trainer – Incorporating Messaging into your Kitchen. Outcomes: Project participants indicated an increased interest in purchasing Oregon grown crops and gained new ideas for incorporation into their cafeteria menus. Participants were given opportunities to address concerns of cost, availability, and customer satisfaction (particularly for school district participants) in cooking demonstrations and recipe development components of the trainings.

Supply Chain Engagement

As part of sending strong market signals to the institutional supply chain, produce and broadline distributors were invited to attend the October 2013 IFBA meeting. They were informed of the purchasing project, learned about interest and current facility actions to increase purchasing of Oregon grown produce, and invited to support facilities in their efforts. In May of 2014 a group letter was sent out to distributors institutions buy produce from. (See **Appendix D**). In the letter, distributors were asked to carry more Oregon grown products, identify them in purchasing catalogues, and support institutions in tracking and reporting local product purchasing. Letters

were sent to US Foods, FSA, Charlie's Produce, Pacific Coast Fruit Co., and Apple Foods by project participants.

Participant Evaluations

Evaluation surveys were administered at the conclusion of the project to those food buyers that had participated in the project as well as food distributors that had participated in or had institutional clients that participated in the project, to assess project impact, glean insights to aid future program planning and determine interest in continued participation. Full results are attached in **Appendix C**.

Base Building for Future Work

The most significant outcome of this project has been the "proof of concept" that it has achieved. Project developers, having experience with different sectors of institutional purchasers, felt there would be benefit in aggregating the purchasing demand volume to leverage greater impact on regional markets. The resulting knowledge gain and purchasing changes have proven this concept sound but also revealed other benefits to an Alliance approach. The buyers were energized meeting and learning from peers in other sectors. They discovered and learned to leverage overlap in food suppliers. There is strong interest among buyers, suppliers and advisors to continue the Alliance and the information gathered and the lessons learned in this project will inform and support the next steps of this group.

BENEFICIARIES

- Oregon specialty crop growers and supply chain partners benefited through increased sales to project participants. As a result of this project an additional 181,868 lbs of Oregon target specialty crops were purchased during the 15 month project reporting period by the 6 reporting buyers. If we assume an average cost of $.50/lb (one buyer reported costs between $.1 and $2 per lb for target crops), the project generated $90,934 of reported sales. Previous research on the impact of local food procurement has shown there to be a multiplier effect within the local economy of 1.86 – meaning this purchasing generated $169,137 economic activity. Additionally we believe the purchasing practices of the wider group of institutional purchasers participating in the IFBA have shifted to regional grower preference as a result of their involvement.
- Customers/consumers at the 10 participating institutions as well as other buyers participating in IFBA meetings and the project tours and culinary training events (including: Beaverton Public Schools, Legacy Meridian Park, Legacy Health & Service, Oregon Food Bank, Meals on Wheels, and Salem Hospital) received increased access to Oregon grown fruits and vegetables and were made aware of the bounty of their region.
- Buyers beyond the IFBA will benefit through the increased access to regionally produced foods resulting from the engagement of regional produce distributors in the project.

LESSONS LEARNED

- There is strong interest from Oregon institutions to purchase and increase purchasing of Oregon grown products.
- Some products are difficult to purchase fresh from Oregon growers because of institutions preference for purchasing minimally processed product (e.g., washed and chopped) and the seemingly lack of availability of this product through their produce distributors. Lettuce was an example of a product that institutions had difficulty purchasing locally for this reason.
- Large institutions prefer to purchase food through their traditional distribution lines making this sector a key target for inclusion of increasing access to Oregon grown produce.
- Tracking of local purchases is difficult for institutions to do for a number of reasons including the increase in time to daily tasks, lack of information from distributors, and distributors not segregating Oregon from NW grown product. Continuing to put the onus of tracking purchases solely on institutions will make a solid understanding of shift in institutions'' purchasing practices difficult. Continued efforts to make tracking and reporting a shared responsibility with distributors needs to occur.

ODA-S13 Oregon Fresh Produce Growers Food Safety Training and Education – *Final report*

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PROJECT SUMMARY

In 2011, Oregon strawberries were linked to 15 cases of E. coli 0157:H7. Of the 15 confirmed cases, seven of the people were hospitalized and one person died. In response to the outbreak, the Oregon berry commodity commissions (Blueberry, Raspberry & Blackberry and Strawberry) and representatives from the Oregon Department of Agriculture, and the Oregon Farmers' Markets Association, agreed that proactive and collaborative efforts to minimize future pathogen contamination of berries was a high priority. They determined that the most expedient method to minimize the risk of foodborne illness from Oregon produce is to train farmers, farm managers and farm workers about food safety in the fields. Additionally, the group determined that outreach and food safety training for Oregon produce producers is crucial for all farms, regardless of size. This project was a continuation of the pilot outreach and education project initiated by the Oregon berry industry in 2012. It offered food safety training workshops and educational outreach to all produce farmers and harvesters in Oregon during calendar years 2013 and 2014.

While there are some growers and packers of Oregon products that incorporate food safety practices in their operations, many do not. For example, in 2012 the Oregon Blueberry Commission estimated that only 25% of Oregon's blueberry growers have GAP certification. Oregon's produce industry must increase food safety training and outreach to protect its customers from foodborne illness and the industry must communicate to its consumers that it is doing everything it can to ensure Oregon produce is the healthiest and safest product available on the market.

PROJECT APPROACH

The California Strawberry Commission (CSC) granted the Oregon berry commissions permission to utilize their food safety training materials. CSC has developed a training program for their strawberry growers that translated well to other types of berries and produce growers. Their Food Safety "Train the Trainers" Workshops include a Harvest Workers Flip Chart that was re-printed for the Oregon trainings and provided to every participant.

Three-hour Food Safety Trainings were held in both English and Spanish. In 2013 there were eight training locations in the Willamette Valley. In 2014 there were fifteen training locations in the Willamette Valley, Eastern Oregon, the coast, and as far south as Medford. Events at three locations were cancelled (Lincoln City, St. Helens, and Astoria) due to low registration numbers.

Luisa Santamaria was recruited as the workshop bi-lingual trainer. She is an Extension Plant Pathologist and Assistant Professor at North Willamette Research & Extension Center, Oregon State University. She is fluent in English and Spanish. In March 2013 she traveled to California to attend a California Strawberry Commission Food Safety Workshop to learn how they carry out the training workshop presentations and utilize the resource materials.

2013 Outreach

Outreach was done through commodity and packer meeting presentations, informational handouts, website and email. Email Announcement Lists: Oregon berry commissions (565 recipients); Oregon Farmers' Markets, Ag Organizations & Commodity Groups (165); Food-Hub Oregon Produce Growers (498).

2013 Registrations

Online registrations: 248
Day of event late registrations: 25
Actual attendees: 165
Number of produce farms represented:.....101 (when a farm sent several people to train, only one was counted for this line item)

Due to the number of no-shows in 2013, email and phone call reminders were done the day before each training in 2014.

2014 Outreach

Outreach was done through electronic communication, meeting presentations and announcements mailed to caneberry and strawberry growers. MailChimp and FoodHub were utilized for direct communication with our contact lists and many ag organizations were solicited to forward the announcements. Also, an online ad with Capital Press was utilized for a two week trial. Email Announcement Lists: Oregon berry commissions (565 recipients); Oregon Farmers' Markets, Ag Organizations & Commodity Groups (165); Food-Hub Oregon Produce Growers (498); Oregon Farm Bureau (60,000); USDA RMA (1,000); Farm Labor Contractors; Oregon Tilth; Columbia Gorge Fruit Growers; Friends of NWREC - Down on the Farm; Peerbolt Small Fruit Update; Ten Rivers Food Web. The expanded electronic outreach was very effective in increased interest and registrations for the events.

Outreach Effectiveness Survey for Registrations

Email Announcement	73.12%
Word of Mouth	8.39%
Other	6.67%
USPS Mail	5.38%
FOODHUB	3.01%
Handout from Meeting	1.29%
Web Search/Website	1.08%

Meeting Presentation 0.86%
Capital Press Online Ad 0.22%

2014 Registrations
Online registrations: 446
Day of event late registrations: 81
Actual attendees: 396
Number of produce farms represented:.....195

GOALS AND OUTCOMES ACHIEVED

Spring/Summer 2013

Goal: An Oregon Produce Growers Food Safety Program will be established and implemented statewide to ensure the risk of future farm related food borne illnesses are significantly reduced.

Benchmark 2013: Hold training sessions in 8-10 Oregon locations to reach 155 farms growing blueberries, caneberries and/or strawberries. Trainings in both English and Spanish.

Target: The training program will focus on Oregon berry and produce farmers and farm managers who will, in turn, train their farm workers and harvest crews. Our target is to ensure 80% of our participating farms will implement their own on-farm food safety program.

Winter/Spring 2014

Goal: Same as 2013 above.

Benchmark 2014: Hold training sessions in 12-16 Oregon locations to reach 215 farms growing blueberries, caneberries and/or strawberries.

Target: Same as 2013 above.

Commodities Represented [1]

Number of Farms Growing Types of Berries	Grows Blueberry ≈ 350	Grows Caneberry ≈ 197	Grows Strawberry ≈ 75	Benchmark	80% Target For On-Farm Food Safety Programs
2013 - 25% Goal	85	50	20	155	125
Actual	66	72	38	176	
Variance	-19	+22	+18	+21	

[1] Commodities Represented Chart: Individual farms often grow several types of berries. The result is that some farms are counted more than once if they grow two or three of the listed berries. The 2013 actual berry farm total was 75 and the 2014 actual berry farm total was 146.

2014 - 35% Goal	120	70	25	215	175
Actual	122	119	56	297	
Variance	+2	+49	+31	+82	
Variance over 2 years	-17	+71	+49	+103	

Performance Measurement

Two surveys were developed for all workshop attendees:

1) The pre-training survey was given to all attendees the day of the training and determined a) what percentage of farms currently have a food safety program in place, b) if they are currently GAP certified, c) what produce they grow, d) if the farms have organic production, and e) how many farm workers do they plan to train with the information they receive.
2) The post-training survey was sent out at the end of harvest season and assesses how many farms have established their own food safety program as a result of receiving the training. Specific questions were included in this survey to a) evaluate the extent of changes in their on-farm food safety behavior, b) determine the number of farm workers who received on-farm training from farmers and farm managers who were trained by the food safety program, c) if they were GAP certified prior to the training (2014 survey only), and d) if they were not GAP certified, have they become certified since receiving the training

2013 Survey #1

Survey Questions		
1 Food safety program?	**77**	**76.2%**
2 How many years? (avg)	**4.0**	
3 GAP certified?	**49**	**48.5%**
4 What do you grow/pick?		
a Blueberry	**66**	**65.3%**
b Blackberry	**41**	**40.6%**
c Raspberry	**31**	**30.7%**
d Strawberry	**38**	**37.6%**
e Other	**39**	**38.6%**
5 Certified organic?	**13**	**12.9%**
6 How many will you train?		
a 0	**8**	**7.9%**
b Up to 10	**35**	**34.7%**
c Up to 20	**15**	**14.9%**
d Up to 30	**6**	**5.9%**
e Up to 40	**2**	**2.0%**
f Up to 50	**4**	**4.0%**
g More than 50	**30**	**29.7%**

2013 Survey #2

165	Mailed		
31	Returned		
19%	Percent		
21		67.7%	1 Changes to your food safety
1329			2 How many farm workers trained
9		29.0%	3 GAP certified since training

2014 Survey #1

2014 Survey #2

Survey Questions			
1 Food safety program?	**132**	**67.7%**	
2 How many years? (avg)	**4.1**		
3 GAP certified?	**83**	**42.6%**	
4 What do you grow/pick?			
a Blueberry	**122**	**62.6%**	
b Blackberry	**69**	**35.4%**	
c Raspberry	**50**	**25.6%**	
d Strawberry	**56**	**28.7%**	
e Other	**76**	**39.0%**	
5 Certified organic?	**28**	**14.4%**	
6 How many will you train?			
a 0	**14**	**7.2%**	
b Up to 10	**74**	**37.9%**	
c Up to 20	**19**	**9.7%**	
d Up to 30	**7**	**3.6%**	
e Up to 40	**4**	**2.1%**	
f Up to 50	**12**	**6.2%**	
g More than 50	**42**	**21.5%**	
7 Did you attend last yr?	**35**	**17.9%**	

350	Mailed		
23	Returned		
7%	Percent		
19		82.6%	1 Changes to your food safety
599			2 How many farm workers trained
11		47.8%	3 GAP certified before training
1		4.3%	4 GAP certified since training

The deadline for Survey #2 was September 24, 2014 in order to meet the ODA deadline for final reports. Many farmers were still busy in harvest season and it is anticipated that the workload during this time of year resulted in a lower return rate. Late surveys will continue to be received and entered to the survey results.

BENEFICIARIES

The primary beneficiaries of this project were berry growers in Oregon because the Oregon Raspberry & Blackberry Commission, Oregon Blueberry Commission and Oregon Strawberry Commission helped sponsor the training program and did direct outreach to their members. However, because the training was open to all produce growers in Oregon, non-berry produce farms also attended: 38.6% of 2013 attendees and 39% of 2014 attendees indicated that they grew produce other than berries. Our outreach included organizations that represented or networked with a wide variety of fruit and vegetable producers. This suggests that there was significant benefit to produce growers beyond the berry farms in Oregon.

In 2013, 67.7% said they had made positive changes to their food safety programs and in 2014, 81.8% had made changes. Comments received in the surveys also indicate the trainings were very useful to attendees: “Forman gave great class. Crew did much better job on meeting regulations.; We have added a hard wash station. We no longer allow food in the field and we now have a first aid kit in the field.; Washing station has been improved.; A lot more awareness on hand washing and how easy it really is to spread pathogens around.; Handling of fruit is more monitored.; More organized cleaning. Improvement with the workers and more responsibility.; We changed one of our training procedures due to your training. We added signage in our training process. Pictures seemed to be helpful along with verbal and documents.; Fields are monitored for animal feces and employees have been trained in harvest hygiene.; Every person

that works with the harvesting of fruit receives a basic training overview of fruit/food safety practices on the farm before harvesting fruit.; etc."

It is difficult to quantify the benefits of a food safety program in Oregon that is intended to prevent food contamination, consumer illness and economic impact to growers. On a larger scale, contaminated food causes 3,000 deaths each year in the US. The cost of food poisoning comes to $14 billion/year, according to a July 2012 study published in the Journal of Food Protection, including the medical expenses of the 128,000 who are hospitalized annually. That figure does not include the millions of dollars that each food recall costs the company or farm involved, the legal expenses from victims' lawsuits or losses incurred by other companies when consumers hear, for example, about contaminated strawberries and then avoid all berries, including those that are perfectly safe.[2] There have not been any berry contamination events in Oregon since the trainings started, so there was no economic loss during that time period.

LESSONS LEARNED

Over a two year period, the training goals and attendance benchmarks were mostly achieved (blueberry in 2013 was the exception). Based on the level of attendance and positive response over two plus years of trainings, it is clear that there was a need for food safety education for Oregon produce growers. It was extremely valuable to have the permission of the California Strawberry Commission to utilized their materials as a time, cost and resource saving measure. Staff were able to immediately focus on outreach and training without the need to develop materials. In California the trainings are only offered in Spanish, but in Oregon about 55% of the attendees took the English training and 45% attended the Spanish training. Because of the significant number of Russian speaking immigrants growing berries in Oregon, future trainings provided for them would also be valuable.

In 2014 three events were cancelled due to low or no registrations. The Willamette Valley and to a lesser degree, Eastern Oregon were the biggest draws for attendance. The coast and southern Oregon events had significantly lower attendance levels. For location-based training sessions, it was determined that the most cost effective and concentrated outreach area is the Willamette Valley where most Oregon produce is grown. A possible future program could include live webinars and/or video taped sessions available on CD and on the web, which could further reduce cost and increase outreach. The downside to using electronic formats is the interactive element that was incorporated into the trainings whereby attendees practiced using the materials on other participants. However, it may be possible to incorporate some of that personalized experience into a webinar format.

[2] Putting a price tag on safe food. LA Times. January 14, 2013 http://ow.ly/BSrwQ

ODA-S14 "Fresh From the Freezer" Continued Promotional Outreach of Processed Pacific NW Raspberries & Blackberries to Manufacturing/Food Services/Retail Markets in East Asia– *Final Report – APPROVED – 2/26/2014*

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PROJECT SUMMARY

The Oregon Raspberry & Blackberry Commission sought to promote processed NW berries for use in manufacturing, food service, restaurant/hotel applications in East Asia and China. Commission Marketing staff and four NW packers attended HOFEX 2013, Asia's leading food and hospitality trade show. The Chinese economic growth has created a middle class that drives manufacturers to supply goods made with Western food products that offer both food safety and health benefits. Oregon's caneberry farmers and packers need to develop global markets for their crops to stay economically viable in today's marketplace. Oregon berry growers are well situated geographically to take advantage of our state's increasing agricultural sales to China, topping $430 million in 2010. Using a targeted approach the ORBC surveyed and conducted a taste testing for retail, food service and manufacturing personnel and collected data on attitudes towards processed Oregon berries in Hong Kong during HOFEX. At the show, the group participated in buyer meetings and provided information at the ORBC booth on health benefits, product usage and product availability. The ORBC will help its farmers/packers learn more about working with export markets by adding an online information page to their website on the topic. This project was a continuation of a previous Specialty Crop Block Grant, which allowed the Oregon Raspberry & Blackberry Commission to represent the Commission and several packing companies at Foodex, Japan, 2012. That trade show allowed us to see the significant interest in Oregon caneberries in the Far East and created a demand for our products. Attending Hofex 2013 was an important continuation of this outreach and allowed packers to attend in person to see for themselves the need to participate in Far East trade shows.

PROJECT APPROACH

Project Concerns and Goals - Why Exhibit Now?

Concern for food safety, desire for premium quality and health benefits from produce such as berries is at an all time high in East Asia. When these concerns are combined with an aging population, who are looking to food as a means to stay healthy, and a rising middle class with an interest in Western food, in countries like Korea, Taiwan and China, we see an opportunity for Pacific Northwest berries to gain an entry into a previously difficult market. The East Asian fine dining industry has grown in both scope and size in recent years. Western food products are being increasingly incorporated into menus and are popular in hotel and restaurants in that region. Fresh berries have been imported into the East Asian marketplace with great success, but

processed berries are not regarded as highly as their fresh counterparts or used as often due to the misconception that they are not as good as fresh berries. The health benefits of berries are becoming better known in China and other Pacific Rim countries and the time is right to expand on that message to include caneberries from the Pacific NW.

Project Approach - Grant Activities Outline

The ORBC goals and objectives for this grant are multi-pronged.

We worked with the OSU Food Innovation Center to create a survey to ascertain current knowledge of our berries in China, attitudes toward processed berries vs. fresh, possibilities for berry use in products and menus, and we offered a sensory tasting panel to find reaction to frozen product, alone and in recipes. This project was carried out during Hofex with representatives of food manufacturing, retail sales, brokers and wholesalers.

We worked with the Ag Marketing Division of the Oregon Department of Agriculture to locate and hire a PR firm who in turned sourced retail, manufacturing and food service personnel in Hong Kong to attend the survey session.

We shipped product, both IQF fruit and valued added caneberry products to Hong Kong for use in the taste and sensory testing and for use in the Hofex trade show booth.

We had a booth at the HOFEX trade show in Hong Kong, China, May 7-10, 2013 where we provided information on processed berries, their benefits and uses.

We recruited four Oregon berry packers who came to Hong Kong, China to take part in HOFEX and experience the marketplace directly, and who self funded their participation.

These packers were Tim Kreder, Palmer Creek Fruit, Quinn Johnson, Willamette Valley Fruit Company, Derek Eisle, Eisle Farms and Josh Scheel, Scenic Fruit Company

To ensure that Oregon berry packing companies are export ready we have created a webpage devoted to information on getting ready to export product with basic information and links to agencies and businesses who can offer further help.

Significant Contributions and Role of Project Partners in the Project.

The *"Fresh From the Freezer" - Continued Promotional Outreach of Processed Pacific NW Raspberries & Blackberries to Manufacturing/Food Service/Retail Markets in East Asia* grant involved four partner groups - Palmer Creek Fruit, Willamette Valley Fruit Company, Eisle Farms, Scenic Fruit and the Oregon Raspberry and Blackberry Commission. Each group contributed collateral promotional materials to be used in both the trade show and the sensory testing portion of the grant. Display products and products for sampling at the Hofex trade show booth were also provided by each of the partners. Each of the packer groups sent representatives to both the Hofex trade show and the sensory testing panel, covering the costs of travel, time and lodging for their own representatives. Each of the packing companies represented attended two pre-show meetings to learn more about shipping product to the event, coordinating time in the booth and giving input that was incorporated into the sensory testing and survey

GOALS AND OUTCOMES ACHIEVED

One of the goals for the project was to collect and interpret baseline information on attitudes and perceptions of Chinese manufacturers, retailers, brokers and food service personnel on processed raspberries and blackberries. This was done by means of an in depth survey that was administered to two groups of participants. The survey took place in a hotel boardroom located next to the Hofex convention center, so it would be easy for these busy professionals to take time to participate in the survey. The survey took approximately one hour to complete and included tastings of various forms of processed caneberries and value-added products. The survey had been translated into Chinese and was read aloud as participants moved through the questions, keeping everyone on the same tasting or question so there was uniform participation. Each person taking the test was also provided with an aide who could help with any questions or issues the participant had while taking the test.

The survey objectives were to measure the appearance, color, overall liking, sweetness, tartness, textural aspects and seed appeal of both whole berries and berry applications such as sauce, jam, smoothies and pie. The second objective was to use a formalized survey outreach to buyers, retailers and brokers to better understand their current perceptions of NW berry products and what type of products would best fit the needs of the region in manufacturing and retail. The third aspect of the objectives was to administer a food sensory and marketing survey to create a baseline for opinion regarding processed Oregon berries and products.

Although this survey sample was moderate (15 participants) it was an in depth look at the issues facing Oregon caneberries in the Far East and in communication with the Food Innovation Center (FIC) who developed the survey in cooperation with the grant directors, it is still significant. The fact that there are no outliers and most participants indicated by their response a cohesive set of answers indicated to FIC that this survey would indeed give us baseline information about the area.

A copy of the survey is attached to this report as well as the FIC's interpretation of the raw data accumulated in a Power Point report. The report shows that overall there was a good appreciation of processed Oregon caneberries with the highest appeal of the product being primarily in its application in beverages, sauces. The seeds in the berries did not appear to pose a significant detriment to enjoyment of these products. The sweetness of the jam and pie was a drawback to the palate of the Chinese participants who preferred more tart taste in their berries and berry products.

Regarding health benefits of berries, much more needs to be done to educate these consumers on the benefits of caneberries. There is already a high awareness of the healthy nature of blueberries but the perceptions of health and caneberries needs to be reinforced by educating the consumers on current studies and papers on this topic.

These conclusions will aid greatly in the outreach of Oregon packers to the Far East giving them a baseline of opinion on which to base marketing campaigns and a sensory baseline to use in the development of products for this marketplace. Since the industry completely lacked any information of this sort, this testing done at Hofex is a significant improvement giving a concrete baseline on which to base future assumptions.

This work is in line with the expectations expressed in the grant of creating a baseline for future marketing outreach to the Far East especially Hong Kong and China.

An informal survey of the current knowledge of ORBC packers was taken and it was found that knowledge of attitudes of Far East consumers and buyers is only anecdotal and not based on survey results but on individual communications.

A follow up on sales to the Far East will be conducted in spring of 2014 to see if sales to the region have increased.

BENEFICIARIES

All of the attending packers, Scenic Fruit, Eisle Farms, Willamette Valley Fruit Company and Palmer Creek Farms gained a first hand knowledge of what show attendees were looking for in berries from Oregon. It was evident that dried products, including freeze-dried powder offered by Scenic Fruit and the snack bars offered by Willamette Valley Fruit Company were quite popular. This was due in part to the shelf stable nature of the product, which is desired by manufacturers and retailers in the Far East. A poorly developed cold chain made buyers wary of frozen product that might arrive at a port destination in good shape but be damaged in various ways en route to a destination.

All Oregon packers and farmers will be the beneficiaries of this grant, as the information gained from this trip and attendance at HOFEX in Hong Kong will be shared with all of them through reports to the commission, articles in the Commission newsletter and the online webpage that provides information on becoming export ready.

LESSONS LEARNED

The lessons learned from this grant are many. The initial phase of the grant which involved working with the packers who chose to attend the HOFEX show and having meetings with them to help them understand the importance of having product at the show and what to expect going to a trade show in Asia was very important. We learned that it takes several meetings to get everyone involved to a complete understanding of what is needed. We went over the shipping of product and what documents are required in one meeting. We talked about transportation, lodging and meals and tours of the area to see retail outlets at another meeting. We had a meeting to discuss what each of the packers hoped to get from the experience and what types of materials they should have to hand out and also worked with them to get all these materials translated. We

had originally felt that one meeting would be good but we found that giving too much information at one time meant that deadlines were missed and materials and product would not be ready to meet the shipping deadlines we faced.

An RFP was put out to marketing and PR firms in Hong Kong. We put out the RFP and were able to find a company who was not already booked for HOFEX and who had the expertise to deal with finding suitable people in the food manufacturing, retail, food service and wholesale areas. Working with this company was often challenging, but in the end the results were very good. The challenges working with the marketing firm chosen were that they seemed to have set ways they wanted to deal with things and we had differing ideas. We had to learn to be firm with this group to get what we wanted. We also had the issue of communicating solely via email, which lend to some misunderstanding. In the end we were able to work with then to procure a good panel to take the sensory and taste testing and also to work well with the hotel kitchen to produce the product that we needed for the tasting products to be representative of the flavors of Oregon caneberries. The group secured a very close and high-end boardroom to have the tasting in.

One of our biggest challenges involved getting approval from the Hong Kong Convention Center to sample our products at the booth. The convention center culinary director at first refused even to communicate with us on this matter and there was no way to get approval for outside catering companies to be allowed to bring food into the convention center. Once we asked our PR firm to handle this we were able to ask if we could bring our food into the convention center for sampling and if it would be possible to have their kitchen cook frozen, commercially prepared cobbler and bring out frozen berries for us to sample. We found that the convention center staff required a phytosanitary certificate for the food we were bringing in plus other paperwork and certification. The US government does not issue phytosanitary certificates for frozen processed products, only for fresh products. Due to time constraints in getting alternate certification for our products that would be acceptable to the Hong Kong Convention Center it was decided not to sample products at the booth. The lesson learned in this case was to begin earlier in dealing with the certificates required for sampling and perhaps to order a freezer for the booth to have IQF product on hand for sampling rather than trying to work that out with the convention center as is commonly done in the US at trade shows.

On the positive side it was learned that the attendees at HOFEX from Hong Kong, Mainland China and the Far East were very enthusiastic about Oregon berries and that they felt secure in the food safety attributes of berries from the Northwest US. We also learned that there is a large gap in what people know about the health benefits of caneberries, since they attribute these benefits primarily with blueberries. This is a large opportunity for NW caneberries to work to create marketing opportunities based on the health benefit message.

ODA-S15 Growing Markets & Next Generation Farmers in Eastern Oregon– *Final report*

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PROJECT SUMMARY

Background, specific issue, problem, or need that was addressed by this project.
Specialty crop producers in the region sell locally and also travel to sell in metro areas such as Boise, Idaho and Portland, Oregon. Producer-members of ORA indicated a need to find more efficient ways to market and transport specialty crops to metro areas and to develop local markets further. Producer members need more local small farms training and development of local markets: restaurants, grocers, schools, hospitals and other institutions. The burgeoning local food movement is a timely and important market for established specialty crops ag businesses and for youth, new and beginning farmers in our region. As evident at the 2012 Oregon Small Farms Conference, the state's young farmer movement is based in Western Oregon. State agricultural extension training for new and beginning producers has never been available in Eastern Oregon and there are very few small farms or specialty crop agents. In addition to improving access to training and technical support, there is a need for internship and mentorship programs. Local producers believe that to ensure the long-term success of specialty crop production in our region the next generation of producers must be deliberately recruited, trained and supported and there must be strong specialty crop markets to ensure their success.

Motivation, importance and timeliness of the project.
Eastern Oregon producers are eager to develop strong markets, increase consumer demand for their products and enhance their own businesses. Total direct sales of all farm products in 2007 was about 1% of farm receipts, however the number of farms selling to local and regional markets increased 14% from 2002 to 2007. Increased sales locally and regionally of specialty crops is expected to continue to increase due to increased consumer interest in locally produced food, Farmers Markets and Farm to School. Regional and local markets will provide an entry point for new, youth and beginning producers. Currently the average age of farmers in Oregon is 57. Oregon Rural Action's Growing Markets & Next Generation Farmers program aims to enhance the overall competitiveness of the local specialty crop industry by strengthening demand and sales of specialty crops and recruiting new, youth and beginning producers by strengthening local and regional markets and increasing access to training.

PROJECT APPROACH

Key activities of this proposal include:

- Market research and development
- Regional supply chain assessment to identify opportunities for growth

- Classes and technical assistance for current, new and youth producers to enhance individual businesses
- A regional consumer education campaign to increase local and regional sales, and
- Development of a Farmer Network to address long-term opportunities and challenges to the local and regional specialty crop industry.

Significant contributions and role of project partners in the project.

- Oregon Rural Action: Members and supporters supplemented all activities and outcomes. Producers: Market vendors donated produce for demonstrations, 8 farmers assisted with OSU Small Farms Course content delivery and field trip hosting.
- LaGrande Farmers Market, Union Co. WIC, ReMax Real Estate, and local chefs.
- Professionals: 7 financial management, private lending, public lending, risk management, accounting and attorneys provided information for Small Farms and Farm Succession. EO University Ag program donated use of vans for Small Farms field trip.
- Northeast Oregon Economic Development District (NEOEDD) provided business development workshops and educational events, access to financing, referrals and consultations, and outreach to producers and media.
- OSU Extension and OSU Small Farms Center provided facilities and technology curriculum, faculty support and outreach for Small Farm and Farm Succession.
- Four Rivers Cultural Center provided discount facility for Farm Succession workshops. Friends of Family Farmers presented information during the Farm Succession workshops.
- Slow Food Wallowas and the Wallowa County Food System Council– assisted with local food dinners featuring specialty crop products.
- North Powder School District and Nutrition Service Director, and Food Corps member assisted with farm to school outreach and training.

GOALS AND OUTCOMES ACHIEVED

Goal 1,Objective 1a:

- Producer, store and restaurant/institution surveys were conducted in Baker, Union, Wallowa, Umatilla and Malheur counties, with 22 responses providing information on product availability and demand, and barriers to sourcing local produce.

Objective 1b:

- 42 Chef at the Market demonstrations held over two years at the La Grande Farmers Market with specialty crop products sourced from market vendors, a 200% increase over 2012. A modeling packet to recreate the program was developed.
- One Farm-to-Fork dinner was hosted in 2014, with ingredients from 10 specialty crop producers. Forty-one consumers enjoyed the meal with presentations by local producers and the local chef. In 2013, four regional dinners were held featuring local ingredients from specialty crop producers with significant attendance and producer support, and bringing in a new institution, Eastern Oregon University. Three news articles were

produced about these local dinners.

- Farm to School brown bag lunches were hosted for faculty and staff about activities leading to more awareness and purchases of local produce for the schools.
- ORA staff and North Powder Food Service Director convened and trained other food service directors.

Objective 1c:

- The guide was expanded beyond ORA's 4-county service area to include Umatilla and other central east Oregon entities or businesses, with a print and an online interactive version: www.oregonrural.org/our-work/local-food/food-farm-directory/. The guide was also an insert in the local newspaper serving three counties. An increase of 15 producer listings.

Objective 1d:

- The potential for a Food Hub was explored with Umatilla County growers and consumers, Soil and Water Conservation District, Pendleton Farmers Market and the City of Pendleton including grower recruitment, facility development; warehousing options and the development of a consumer coop/local foods grocery store. A private individual in Union County was assisted with business development for the potential purchase of a privately owned facility for produce aggregation, processing and sales.

- Assistance was provided to Nella Mae's Fresh Produce (grower/distributor) to develop weekly seasonal "fresh picks" promotions and delivery, with sales from local growers to institutional buyers (2 schools) and individual customers.

- Assistance was provided to June's Local Market Producer Network LLC, to develop infrastructure and market channels to serve farmers markets and a resort.

- Assistance provided to develop joint promotion of Wallowa Valley and Lower Valley Farmers Markets; jointly apply for funds promoting EBT purchases and outreach.

Objective 1e:

- ORA's Eastern Oregon Regional "Sub-Hub" of the Ecotrust Food Hub was established for easy access to specialty crops, with 113 listings, compared to six in May of 2011.
- A producer interest survey was conducted with 8 responses identifying the types of assistance, training and networking most needed.
- Developed a Farmer Network leadership team and Eastern Oregon Small Ag Network as an informal group, coming together or providing input as time or interest allows.

Goal 2, Objective 2a:

- Growing the Small Farm Dream course offered for the first time in EO with use of new video course content and adapted to fit our region's needs. Serving 16 new, beginning

and/or exploring specialty crop producers. OSU contribution of classroom space and technology.
- Exploring Sm. Farm Dream course 1st time in EO, La Grande and Ontario with 46 students.

Objective 2b:
- ORA's Eastern Oregon Regional "Sub-Hub" of Ecotrust Food Hub was established for easy access to specialty crops, with 112 listings, compared to six in May of 2011.
- Information on iFarm was provided during two Farm Succession workshops.
- IDA's produced $98,000 in matched savings by to producers start or expand their businesses.
- Outreach and publicity conducted for the USDA microloan program targeting previously ineligible small agricultural producers to apply for funding.

Objective 2c:
- 103 workshops and educational events held during 2012-2014, serving 187 producer participants, including Foundations of Business, Accessing Local Capital, and Social Media Dos and Don'ts, Coop Development, and use of Conservation Easements.
- Low Row Season Extension workshops in Union and Wallowa Counties serving 42 small-scale specialty crop producers (SCP) attending; taught by a local SCP. Tour of year-round unheated greenhouse production setup and materials to construct a low row cover.

Objective 2d:
- Ties to the Land Farm Business Succession Planning workshop series offered in Ontario and Pendleton, 3 professionals delivered supplemental expert content and FOFF provided additional presentation on the iFarm program & National Young Farmers Coalition beginning farmer support.
- Partners made a case for EO to be an expansion site for the Rogue Farm Corps program.
- 60 producers over two years to benefit from OSU Small Farms programming (first time available before in Eastern Oregon) - 48 have benefited.
- In 2014, 110 people were served fresh fruit and vegetable samples at the market. (10% increase from 2013).
- 13 specialty crop market vendors donated product for 21 market demos
- 10 specialty crop producers' products were featured at the Farm-to-Fork Dinner
- 18 producers participated in Farm Succession Planning Workshops series
- 60 producers to be listed in the Eastern Oregon Local Food & Farm Directory –146 listings have been achieved

- 20 producers will take part in quarterly Farmer Network (Small Ag Network) gatherings- Seven producers have joined the regional and local leadership teams.
- Licensed kitchens - referrals and follow-up assistance provided to 3 producers
- 1 specialty crop producer assisted with assessing property purchase
- 22 businesses participated in surveys to provide information on product availability and demand, and barriers to sourcing local produce.
- 5 farms interested hosting a site for expansion of the Rogue Farm Corp in 2016.
- 3 schools in Union County purchased from 4 local specialty crop growers; 1 school in Joseph, Ontario and Baker County.

BENEFICIARIES

1. La Grande, Wallowa County and Lower Valley Farmers Markets are summer only markets and benefit from all additional marketing and technical assistance. **2.** Specialty crop producers in four county area grow produce with one of the shortest growing season is in the state and we greatly increased their exposure. **3.** Students of schools purchasing local food have developed an appreciation and connection to their local economy and food system. **4.** Oregon Rural Action has benefited greatly with this project. It allowed more time to connect and build stronger relationships with membership. **5.** NEOEDD provides resources and facilitates quality decision making for the benefit of entrepreneurs, businesses and communities in Northeast and was able to expand on existing programs, offer services to larger audience.
For quantitative data see attachment.

LESSONS LEARNED

- Working as a larger coalition of institutions works well for spreading out the work but makes challenging to meet regularly and discuss details. A reporting format from each partner should be made prior. Staff should have had time to research other similar projects.
- Each sector of the community food system needs to be worked on at the same time; however the amount of work in each section needs to be prioritized so energy and focus in data collection and evaluation can take higher priority. It takes more time to work in this region where the work performed is spread out.
- When relying on volunteers to perform much of the work an expectation needs to be set that some of the work may need staff time and attention.
- Projected participation rates and impacts in the original proposal were overly optimistic, given the barriers of distance, trust, inexperience and uncertainties around options as well as opportunities for new staff, farmers, youth, local institutions, and education districts. We are laying foundations in understanding and building relationships, one of the four legs of the chair – connections, and capacity, health and wealth-building.
- Institutional purchasers –hospitals and school district administrators, teachers and nutrition service directors need self-interest, education, investment and belief in the cost/benefit of instituting local produce purchasing with forward contracting and farm-to-

school projects/programs in schools. They have little time or ability to engage outside staff or farmers directly; school district email firewalls are restrictive making it difficult to communicate with them via email as a group.

- Calling, direct solicitations and visits continue to build relationships and provide information, and extremely time consuming due to large radius of distances for Farmer Network.
- Youth agricultural opportunities have not been accessible to staff for a number of reasons. Loss of two key Ag teachers involved in planning of foundations classes. New Ag instructors with needs or outcomes that don't include changes for 2014 Ag. Curriculum.
- All original staff was replaced in the first year affecting service delivery, including production of the Local Food & Farm Guide, "farm-to-fork" dinner, farm tours, upgrades to our financial accounting system, and member organizing.
- Oregon Rural Action's membership data and tracking was incomplete due to legacy data entry issues – this system was redesigned to capture appropriate information.
- As a member-led, grassroots organization it often takes time for our producer-members to come to agreement on a plan of action, make priorities and focus our efforts.
- Making phone calls and face-to-face connections with folks in our communities seem to be the only way to hold people accountable. Early on in the grant electronic forms of communication were relied on too heavily.
- Producing the Chef at the Market demonstration booth provided an opportunity for engaging new members, unexpectedly were asked to develop a model for other markets in the region.
- Engagement of producers in general has been difficult at best. People work hard at just making ends meet and don't have the time or motivation to become leaders in what ORA is doing. People need to feel that work benefits them directly and need discreet scopes of work so they know what they are volunteering for.

ODA-S16 Strengthening Food Safety Management Systems for Specialty Crop Production, Packing and Processing– *Final Report*

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PROJECT SUMMARY

The Food Safety and Modernization Act (FSMA) will have a major impact on specialty crop agriculture and food processing throughout the U.S. including the Pacific Northwest. It will require different on-farm and in-plant responsibilities including harvest and postharvest handling practices, record keeping for minimizing the risks of food borne disease hazards, and food safety training requirements for personnel. Specialty crops in the Pacific Northwest are critical to the regional economy. It is imperative to strengthen the ability of specialty crop growers, packers and processors to effectively implement the regulatory requirements of the new FSMA. The primary objective of this project is to increase understanding of food safety management systems and documentation through interactive workshops with Pacific Northwest growers, packers and processors. This objective is important because many specialty crop industries will need education and assistance to understand and implement programs that address new food safety regulations. It is timely because outcomes of FSMA are projected for implementation over the next three years. Targeted workshops will assist growers, packers and processors to develop food safety practices and documentation for their operations. Personnel from Oregon State University will work closely with colleagues from Washington State University in coordination and hosting of workshops on FSMA.

PROJECT APPROACH

The major activities in the project were coordinating and holding workshops on the Food Safety and Modernization Act (FSMA). Several conference calls/polycom meetings were held during the early period with partners at Washington State University (WSU) to determine the best approach in developing workshops for industry (producers and processors). The working group included personnel from OSU: Michael Morrissey, Qingyue Ling, Sarah Masoni, Doretta Claycomb, Mark Daeschel, Yanyun Zhao, Laren Gwin; and from WSU: Karen Killinger, Barry Andrew, Cathy Blood, Richard Dougherty, and other institutions such as Oregon and Washington Departments of Agriculture. Locations, dates and agendas for the workshops were developed with workshops to be held in Washington and Oregon. Careful considerations were given to the format of each workshop to make sure that deliverables were the same. Slide sets were developed among the working group and presentation topics were established. We were fortunate to have commitment from the US Food and Drug Administration (FDA) and the presence of Charles Breen, District Director at each of the workshops. Various representatives

from Oregon Department of Agriculture Food Safety Division also presented at the workshops held in Oregon. The following workshops were held in the first year of the project.

March 14, 2013, North Willamette Research & Extension Center, Aurora, OR
March 15, 2013, Holiday Inn Downtown Yakima, 802 E Yakima Ave , Yakima, WA
April 15, 2013, WSU Snohomish County Extension, 600 128th St SE, Everett, WA
April 17, 2013, Unitarian Universalist Church, 1685 W 13th Ave, Eugene, OR
April 19, 2013, Four Rivers Cultural Center, 676 SW 5th Ave, Ontario, OR

This series of workshops were held in Oregon and Washington that highlighted the main points of the proposed rules. Discussions as well as Q&A were encouraged to clarify aspects of the rules. Instructions were given verbally and in written form to explain the mechanism for individuals and associations to comment on the proposed rules.

An unscheduled opportunity to extend the listening sessions for high level personnel from the FDA was discussed in July through several conference calls. The main objective was for the FDA Deputy Director of Foods and Veterinary Medicine and the FDA-FSMA team to tour Eastern Oregon and Central Washington and visit with stakeholders about their concerns with FSMA. This would allow FDA personnel, who are responsible for the writing and design of FSMA, to observe different agricultural water and cropping systems in the Pacific Northwest, particularly those in Southwest ID, Eastern OR and Central WA that depend on irrigation water. The FDA is making several outreach tours to different regions of the country to listen first hand to concerns of producers. The farm tours were arranged through the Oregon, Washington, and Idaho State's Departments of Agriculture. Listening sessions were also arranged for Ontario and Yakima primarily through WSU and OSU personnel, which held sessions in these and other locations last April. Karen Killinger, WSU Associate Professor, did an excellent job of coordination and working with different agencies in making this tour happen with relatively short notice. The main difference with the tours and listening sessions was the high level of involvement from the FDA and the participation of Mike Taylor, Deputy Commissioner of Foods and Veterinary Medicine for the FDA and several Washington DC staff responsible for the writing of the Produce Rule. All of the Directors of the State Dept. of Agriculture (ID, WA, OR) and other state officials were on the tour while federal legislative staff attended the listening sessions. The tour occurred during the week of August 11 and covered the following areas:

Aug. 11, 2013 – SW Idaho: irrigation districts, onion farms and packing plants, mint operations
Aug. 12 – Ontario OR region, irrigation districts, onion farms, Malheur Exp. Station, listening session
Aug, 13 – Wenatchee WA area, cherry farms during harvest, tree fruit operations, packing plants
Aug. 14 – listening session, irrigation districts, pear packing operations

Aug. 15 – Hermiston - watermelon and topped onion operations; Aurora-berries and vegetables.

On August 7, 2013, the Hazelnut Industry of the Pacific Northwest had their farm day tours. This was sponsored by the Oregon Hazelnut Commission and held at the Keeley Farm Orchards in St. Paul, OR. Professor Michael Morrissey was part of a team effort to review the proposed Produce Rules of FSMA to the hazel nut framers and producers. Approximately 400 people were in attendance. Chief beneficiaries were hazelnut growers and handlers who attended the farm tour and listened to the food safety session. In both the Hazelnut programs and the Food Safety Forum there was agreement that continued work with state agencies and public universities is important for the implementation of FSMA over the next several years. Several research areas were identified to help the industry develop standards methods to assure a safe food supply.

Because of the several issues in the Produce and Preventive Controls Rules there was a delay in the publishing of the final FSMA Rules due to extended comment periods and concerns from producers and food processing industry. It was decided that once the final Rules are published there will be continued workshops addressing these regulations. In the meantime, we developed a 2 hr seminar for processors of specialty crop products that are run at the Food Innovation Center. The primary audience for these seminars is small-scale processors and start-up food processing companies. Nine 2-hr seminars were held over the past two years.

Seminar: Overview FSMA Hazard Analysis and Risk Based Preventive Control.
This overview covered the proposed Rule 21 CFR Part 117 Subpart C – Risk Based Preventive Controls. Background information was given on the governing bodies, rule making process, and the current rules in the comment period. Who is covered, exemptions and modified requirements. Subpart C was reviewed by sections: Food Safety Plan, Hazard Analysis, Preventive Control- (risk based, parameters, cross-contact, process controls, allergen control, sanitation controls), Recall Plan, Monitoring, Corrective Actions, Verification, Qualified Individuals, Compliances dates and How to comment on the rule.

There is an additional delay in the releasing of the new version of the proposed rules for FSMA. We have had conversations with our colleagues at Washington State University and have decided that additional listening sessions should be held after the new rules come out. The revised Produce Rule, Preventive Controls Rule, Preventive Controls for Animal Foods, and Foreign Supplier Verification Programs were published by the FDA on September 14, 2014. The FDA have issued a 75 day comment period for the revised language only of the recently published rules. A meeting between the PIs of the “Strengthening Food Safety Management Systems for Specialty Crop Production, Packing and Processing in the Pacific Northwest” at the WA Food Protection Association meetings on Sept. 24-25 was held to discuss activities over the

next quarter not the proposed Rules have been revised. It was decided that no more listening sessions would be held until the final rules were published.

Presentation at the National Association of Quality Assurance Managers, held at Sandy, OR, May 6, 2014. "FSMA to date – Impacts for the Food Industry", presented by MT Morrissey.

A request for proposals for the development of a Western Regional Food Safety Center was issued by the USDA in May, 2015. A team of food safety faculty at Oregon State University decided to apply for the grant. These included project leader Michael Morrissey and co-PI Yanyun Zhao. Dr. Robert McGorrin and Dr. Christina DeWitt also were participated in the grant application. A full three weeks of faculty time were devoted to grant application which involved 13 western states and 2 Pacific Island nations. The overall goal of this proposal is to build a collaborative infrastructure in the Western US region to support training needs for the Food Safety Modernization Act (FSMA). This includes training, education, extension, outreach, and technical assistance as it relates to the Produce and the Preventive Control Rules . The proposed Wester Center includes participation from land-grant Universities in Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, and the territories of American Samoa and Guam. These land-grant universities will coordinate train-the-trainer activities to establish the groundwork for training grams targeted at owners and operators of small and medium-sized farms, beginning farmers, socially disadvantaged farmers, small food processors, and small fruit and vegetables merchant wholesalers and processors affected by FSMA associated rules. In addition to land-grant universities, partnerships with stakeholder groups including state and local regulators, community-based and non-governmental organizations will be leveraged to maximize training effectiveness and delivery opportunities. Specific objectives are:

GOALS AND OUTCOMES

The primary objective of this project is to increase understanding and implementation of food safety management systems and documentation through interactive workshops with Pacific Northwest growers, packers and processors of specialty crops. Seven listening workshops were held in Oregon and Washington were FSMA Rules and implementation impacts were discussed with personnel from Oregon State University, Washington State University, state representatives from the OR and WA Departments of Agriculture and the U.S. Food and Drug Admiration. Teaching materials were developed to be used at each of the workshops. The outcomes showed that these goals were met and exceeded in some areas. During the first two workshops held there were 48 attendees at the workshop in Aurora, 78 in Yakima, 78 in Everett 43 in Eugene and 94 in Ontario - 94. The attendees were primarily producers (farmers) whose operations varied in size. Additional sessions were held during hazel farm days were over 400 attendees were brought up to date with FSMA regulations and expected release of the Final Rules. Additional listening sessions and were held in Yakima, WA and Ontario, OR with personnel from the US-FDA Washington DC office as well as regional offices. There were 120 and 95 attendees at

these sessions. These were supplemented with farm tours in southern ID, Central WA, and eastern OR as well as meetings held between state and federal officials. These tours and listening sessions created a better understanding of contentious issues especially around the use of water in irrigated crops and was beneficial for government officials as well as federal and state agencies to get a firsthand look at different farm systems used in growing and harvesting specialty crops.

BENEFICIARIES

The main beneficiaries for these workshops were producers and processors in specialty crops in the Pacific Northwest. These specialty crops industries include tree fruits, berries, stone fruits, root crops, leafy greens and other vegetables as well as tree nuts. Small and large scale food processors who process specialty crops also participated in the workshops. These groups received valuable information about the proposed FSMA Rules, were able to listen directly to FDA personnel as well as university experts in their explanations of how the proposed rules were developed as well as how they can make direct comments on the rules before they take effect. Additionally, these workshops expedite industry implementation of food safety practices needed to meet regulatory requirements. In all the sessions there was very good interaction between stakeholders and presenters and attendees were urged to submit comments to the FDA about their questions and concerns of the new FSMA rule.

Additional sessions and farm tours were held in the summer on 2013. The beneficiaries of the FDA tour includes the numerous growers and processors and in Idaho, Oregon and Washington that were visited on the tour and attended the listening sessions. The listening session in Ontario, OR was attended by 95 participants and there were close to 120 attendees at a similar number attending the session in Yakima, WA. The audience was specialty crop growers (onions, apples, hazelnuts, produce) as the main issue was focused on water irrigation quality and testing. The other beneficiaries were the FDA personnel from Washington DC and regional offices. They had excellent opportunities to see different farming systems first-hand and discuss the major issues with growers and processors. Many of the federal and state agents reported that it was a very good experience for them and gave them a better understanding of the different systems used in growing crops in the Pacific Northwest.

The awarding of the Western Regional Food Safety Center to Oregon State University will have continued benefits for specialty crop growers and processors during implementation of FSMA. The focus of this grant will be to coordinate trainer of trainers and qualified individuals in the Produce Safety Rules as well as the Preventive Control Rules. Training will be critical to meaningful implementation of FSMA for the industry and for maintaining a safe and wholesome food supply for the consumer.

LESSONS LEARNED

Overall, the project was successful in helping specialty crop growers and processors understand the impacts of FSMA. It was important to have the cooperation of US FDA and the state agencies overseeing food safety in the respective Departments of Agriculture involved in the project. It was also very helpful to utilize branch experiment stations located in different areas of the states in hosting the listening sessions. Open communication was key to a successful start of the project. There were several sessions between different groups at WSU and OSU in developing slide shows, working out meeting logistics and using the correct vehicle for announcements of the sessions. There main problems that we encountered were the delay in the publication of the Final Rule for FSMA. Without the Final Rules we could not run official training programs for groups that wanted to undergo training. This has been solved as OSU has been awarded a grant for being the Western Regional Food Safety Center which will involve us in coordination the training activities for FSMA implementation.

ODA-S17 *Growing Agripreneurs*: Training the Next Generation of Farmers (Phase 2) – *Final report*

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PROJECT SUMMARY

Oregon State University (OSU) Small Farms' Growing Agripreneurs program, in partnership with Rogue Farm Corps (RFC) Farms Next internship program, addressed the need to educate and train the next generation of specialty crop producers. As the 2012 USDA Agriculture Census reported, the average age of farmers both in Oregon and the United States continues to increase, highlighting the need for expanded beginning farmer education. While farmers are aging, the demand for locally produced food has also increased dramatically over the past ten years. Opportunities for direct market sales in specialty crops have skyrocketed and provided beginning farmers with new markets.

The purpose of Growing Agripreneurs is to offer an innovative and effective hands- on training, educational programming and business development support to beginning farmers, increase the number of successful farms in southern Oregon, provide a model program for other communities in Oregon and the nation, increase food security in southern Oregon by producing more locally grown food, and create new farm jobs in southern Oregon.

Growing Apripreneurs Phase II built on a previously funded Specialty Crop Grant. The initial grant established the Growing Agripreneurs program and resulted in the creation of three curriculum modules in beginning farmer specialty crop production. The second grant funded a partnership between Rogue Farm Corps' FarmsNext program and the Growing Agripreneurs program to reduce redunancy and increase efficacy of beginning farmer education in Southern Oregon. This collaboration presented a model education and training program that integrates classroom experience, hands-on mentoring, farm business planning and marketing support. Additionally, the second grant funded the development of a toolkit for Growing Farms and an additional four curriculum modules.

PROJECT APPROACH

During 2013, eight participants completed the Growing Agripreneurs program. The program, which began in April and concluded in October, consisted of seven classes, five farm tours, monthly skill building sessions, and weekly training hours on the Teaching Farm. By October 2014, seven participants will complete the Growing Agripreneurs program. Rogue Farms Corps staff contributed to the program by organizing and facilitating on-farm tours. Seven of the eight

participants in the 2013 Growing Agripreneurs program reported that the farm tours were a critical component of the program as they showcased successful specialty crop farm businesses. In October 2013, Growing Agripreneurs participants received a post-test and were interviewed to assess the effectiveness of the program and retention of information learned. The post-test consisted of twenty questions pertaining to topics covered during the Growing Agripreneurs educational program. The average score of the eight students who completed the test was 18.2 or 91%

Results of interviews conducted in November 2013 provided useful feedback for the program, including a request to offer more options for field hours and a request to organize field trips to visit each other's farms. In general, participants indicated a high degree of satisfaction with the program. Of the eight students interviewed, five had plans to farm in 2014, either in their own operations or on another farm. One indicated that she will not farm in 2014, and two were unsure of their plans.

Participants of the 2014 program have not completed surveys or been interviewed as the program does not conclude until October.

During 2014, OSU Faculty completed the Growing Agripreneurs Toolkit and four additional curriculum modules: Irrigation; Winter Farming, Equipment; and Business Planning. Two other OSU Extension Small Farms Faculty members have used the Toolkit and plan to host Growing Agripreneurs programs during 2015.

GOALS AND OUTCOMES ACHIEVED

Goal #1 Offer innovative and effective hands-on training, educational programming and business development support to beginning farmers.
Activities Completed Recruited participants through emailing OSU Extension Small Farms list and partner organization lists, social media, distribution of brochures; conducted seven classes in specialty crop production and marketing; offered tours of five successful specialty crop farms; offered monthly on-farm skill building sessions; and provided weekly farm hours with a farm mentor.

Target: 54 participants will attend 7 classes and 5 on-farm education tours and demonstrations.
Actual: 35 participants attended 7 classes and 5 farm tours.

Goal #2 Increase the number of successful farms in southern Oregon.
Activities Completed Conducted seven classes in specialty crop production and marketing; offered tours of five successful specialty crop farms; offered monthly on- farm skill building sessions; and provided weekly farm hours with a farm mentor. In particular, offered a business class to introduce beginning farmers to concepts of business planning.
Target: 15 new farm businesses within 2 years of completion of grant period.

Actual: So far, we are aware of 3 new farm businesses started by graduates of Growing Agripreneurs in 2013. We will continue to survey graduates of the 2013 and 2014 programs to track long term outcomes.

Goal #3 Offer as a model program for other communities in Oregon and the nation. Activities Completed Writing Growing Agripreneurs Toolkit; compiling resources for Toolkit; editing of Toolkit by additional OSU faculty; and creation of four additional curriculum modules including powerpoint presentations and instructor outlines.
Target: Completion of Toolkit and Curriculcum for starting a Teaching Farm. Actual: Toolkit and Curriculum were completed. Two OSU Extension Small Farms faculty members have already downloaded the Toolkit and plan to start Teaching Farms in 2015.

Goal #4 Increase food security in southern Oregon by producing more locally grown food. Activities Completed Donation of excess produce to local food banks. Attendance at the Jacksonville Growers Market for four weeks.
Target: 7,000 lb of produce sold through 3 underserved farmers markets.
Actual: 4,000 lb of produce donated to local food banks. 600 lbs of produce sold through 1 underserved market.

Goal #5 Create new farm jobs in southern Oregon.
Activities Completed Conducted seven classes in specialty crop production and marketing; offered tours of five successful specialty crop farms; offered monthly on- farm skill building sessions; and provided weekly farm hours with a farm mentor. In particular, offered a business class to introduce beginning farmers to concepts of business planning.
Target: 27 new farm jobs within 2 years of completion of grant period.
Actual: 14 new farm jobs from Growing Agripreneurs and FarmsNext graduates of the 2013 program. We will continue to survey graduates of the 2013 and 2014 programs to track long term outcomes.

BENEFICIARIES

Growing Agripreneurs participants:
15 participants in 2013 and 2014 received hands-on training and classroom education in specialty crop production and marketing. Currently three graduates have started their own farm businesses with an estimated $20,000 gross sales per year for a total of
$60,000.

FarmsNext participants:
22 participants in 2013 and 2014 attending seven classes and five farm tours with Growing Agripreneurs participants. FarmsNext participants, who intern on specialty crop farms, had access to high-quality classes taught by OSU faculty members.

Food banks:
4,000 lbs of fresh produce was donated to local food banks.

Jacksonville Growers Market customers:
600 lbs of fresh produce was sold to Jacksonville Growers Market customers.

Specialty Crop Growers:
Three Growing Agripreneurs graduates from the 2013 season are currently working at local specialty crop farms. The growers have been able to hire well-trained, knowledgable employees.

Agricultural Professionals:
Two OSU Faculty members will be using the Toolkit and Curriculum to launch their own teaching farms in 2015. The Toolkit and Curriculum will be available throught the OSU Small Farms website for use by other agricultural professionals.

LESSONS LEARNED

Collaboration with Rogue Farm Corps
In general, offering classes and farm tours for both Growing Agripreneurs and FarmsNext participants improved efficiency and reduced redundancy of beginning farmer education in Southern Oregon. The increased class and farm tour size did present some challenges, however. If all participants of both programs attended a program, class discussions and farm tours were more difficult to facilitate. Occassionally, scheduling an event for both programs was difficult. One unexpected benefit of the collaboration was the networking and sharing of information between participants of the two programs.

Goals and Outcomes Achieved
Actual numbers fell short of target goals. Less Growing Agripreneurs participants took part in the program than originally projected which resulted in fewer new farm operations and fewer jobs created. One lesson learned was that the structure of the program relies on a low participant to Farm Manger ratio, so the target goals for participants should have been lower.

Toolkit Development
During the course of developing sample budgets for the toolkit, it became evident that Growing Agripreneurs programs need to be subsidized through free access to land and equipment. A fee-based structure would require high costs to participants, and might be difficult to recruit for.

ODA-S18 Organizing Community Supported Agriculture Farmers and Consumers: Increasing CSA Participation in the Greater Portland Area– *Final Report*

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PROJECT SUMMARY

This project was developed by Portland Area CSA Coalition (PACSAC) farmers who market specialty crops using the Community Supported Agriculture (CSA) model. The overall problem addressed by the project is the lack of growth of CSA memberships in the Portland area. To meet the goal of increasing the number of CSA shares sold in the Portland metro area, the farmers identified the following needs: a marketing and outreach campaign for CSA, a framework for farmers to support CSA marketing, and support for the retention of existing CSA members.

This project was both timely and important to specialty crop growers whose market is the Portland metro area. The project was developed as Oregon was exiting the most recent recession that led to the loss of CSA members. At the same time, a surge in interest in farming and the development of several beginning farmer programs meant that more farms were adopting the CSA model. The pool of consumers decreased while the numbers of specialty crop farmers increased. This was a critical time to implement a marketing campaign to raise consumer awareness of CSA and bring the farmer community together to support this effort.

PROJECT APPROACH

The approach outlined in the grant was to hire marketing professionals, implement their plan, and organize farmers to participate in the effort. To coordinate this, PACSAC hired Caylor Roling in February 2013. Because the marketing plan relied on social and earned media, this half-time position was critical to marketing and farmer organizing efforts.

Because of funding challenges outlined in earlier reports, PACSAC began its market research with in-kind support from a Portland State University MBA candidate. This was the first ever research into the demographics and buying habits of Portland area CSA members and included 512 households representing 20 area farms. The data revealed that well over half of CSA members joined because a family member or friend told them about CSA. Because CSA membership is a relationship that requires trust that a farmer will deliver the vegetables paid for in advance, a reference from a trusted person makes sense. Using current members' networks to reach new members became one of the strategies that informed PACSAC's marketing efforts.

PACSAC hired the marketing and communications firm Brink Communications who developed a messaging document and campaign plan for CSA outreach. The plan's strategies focused on:

increasing the digital reach of PACSAC through a newsletter, social media, and website; telling compelling stories about the benefits of CSA; and reaching new members through partner organizations and existing members. Digital and print ads were purchased for the project, but the majority of activities focused on leveraging the support of allied groups to reach consumers. City of Portland Bureau of Planning and Sustainability (BPS) staff provided useful guidance in the development of the marketing plan.

Within the strategy of leveraging the support of allied groups, PACSAC completed two significant projects that increased consumer awareness of CSA: a CSA webpage on the City of Portland's website and Portland's first CSA fair. Both generated compelling stories and leveraged significant marketing resources from partner organizations.

PACSAC provided the information and support to BPS to create a CSA page and map CSA share pick-up locations. The CSA webpage leveraged the support of BPS' GIS department and communications team. The page listed contact information for all CSA farms that serve Portland and generated more than 6,000 visits in the first month it was published. The map also generated a great deal of media coverage during the main CSA sign-up season (Jan-April). Information about the map appeared on KOIN 6, in *The Oregonian*, several blogs and newsletters, and was directly mailed to every household in Portland through the City's *Curbsider* newsletter. The map continues to be a useful tool to connect potential CSA members with local farms.

In 2015, PACSAC organized the CSA Share Fair. The nonprofit Ecotrust provided a great deal of support for this project including the use of their building, event coordination, the development of messaging, and outreach to media outlets. Thirty-three farms participated, and the event was attended by 1,065 people. The CSA Share Fair was directly responsible for the sale of 154 additional CSA shares and $61,898 in revenue to individual farms. Information about the CSA Share Fair was included in at least 21 publications, the event increased traffic to portlandcsa.org to 3,000 views (under 2,000 a month is average), and tremendous community support generated $19,118 of in-kind contributions. PACSAC is in the process of finding sponsors for a 2016 event.

In engaging farmers to support the marketing campaign, the success of the CSA Share Fair demonstrated the value of a coordinated marketing presence. Seven new farms became involved because of that event. Ms. Roling also organized ten CSA farm tours during the grant period, a marketing and communications workshop, and an event to engage farmers in the marketing plan.

GOALS AND OUTCOMES ACHIEVED

Goal 1: Increase the number of CSA shares sold in the Portland Metro Market.

Within this goal, PACSAC achieved the outcomes of conducting market research about CSA and implementing a broad education and marketing campaign.

Implementing the CSA marketing plan involved redesigning portlandcsa.org, developing a consumer-focused monthly newsletter (14 monthly issues with 355 subscribers), creating a social media presence (building from 0 to 612 Facebook followers), and writing content for area blogs and newsletters. At least 52 media hits resulted from PACSAC's marketing work during the grant period, and Ms. Roling staffed a table at more than 36 events.

This goal also required the collection of data about CSA in the Portland metro area. BPS has collected CSA data since 2008 and provided support by broadening its 2012 survey to include Clackamas, Multnomah, and Washington Counties. In 2012, 31 farms reported selling 6,685 shares, and in 2014, 53 farms reported selling 7,958 shares.

Aside from the 154 shares directly attributable to the CSA Share Fair, determining the number of shares directly connected to the work of this grant is a challenge. Anecdotal information from farmers indicates that their relationship with PACSAC's marketing effort increased the numbers of shares they sold. Hood River Organic noted that "PACSAC is a huge contributor to our customer acquisition." Full Cellar Farm stated "At least half of my 50 members found me through the PACSAC website. What a resource!" Supa Fresh Youth Farm said "We have already gotten more calls about our farm since this page has gone up so I think it's helping."

Goal 2: Increase member retention in existing CSA farms in the Portland metro market.
This goal also had a data-collection component which Ms. Roling was unable to complete given the delays in starting the project, time requirements of implementing a broad marketing plan, organizing CSA farmers, and collecting CSA share data within a 20-hour week. However, Ms. Roling did identify that better farmer communication could increase member retention as well as acquisition. Ms. Roling organized a marketing and communications workshop and created a toolkit to improve on-going communication with members as a member retention strategy. Through bi-weekly messages to a 200 farmer listserv, Ms. Roling also provided farmers with message content and technological tips and tools to support CSA member communications and retention.

Goal 3: Increase the number of CSA farms pledging membership support to PACSAC to 50.
PACSAC began this project with 16 farms pledging support, and currently 48 farms are listed on the website and have become campaign supporters. Through this goal, PACSAC achieved the outcomes of recruiting farmers to PACSAC and creating an online directory of member farms. PACSAC also built its capacity to continue marketing CSA after this grant by receiving in-kind consulting support for creating stronger organizational leadership and developing a strategic marketing plan into 2017.

BENEFICIARIES

As evidenced above from farmer quotes and results of the CSA Share Fair, farmers who market specialty crops through the CSA model directly benefited from this project. Consumers also benefited through the development of the pick-up site map, an event to directly connect with farmers, an informative website, and better CSA messaging.

The Portland Area CSA Coalition benefited from the project through the development of more structure, a new board of directors, and a more concrete mission, vision and plan that will enable the marketing of CSA to continue after this grant.

LESSONS LEARNED

Collaborative marketing efforts are important to increasing CSA sales. Community Supported Agriculture, specifically paying a farmer in advance for vegetables, is very different from the way people purchase food or other goods. Consumers need to hear about CSA multiple times from multiple sources, particularly people they trust. This requires education about CSA in addition to individual farm's marketing. Farmers markets have staff that work to bring consumers to the market, and CSA coalitions like PACSAC can provide similar marketing and education to bring people to the CSA model and connect them with local farms.

Portland residents want more information about and connection to CSA. Local, farm-fresh food is readily available in the Portland area through a high concentration of farmers markets. Local grocery stores and co-ops also offer food purchased from local farmers; however, more than 1,000 people came to a four-hour event to meet farmers and join a CSA. Demand for CSA exists, and consumers need a resource like PACSAC to help them sort through the diverse CSA options and find the farm that is right for their family.

Education and marketing alone, without subsidies or financial incentives, will result in a more gradual increase in CSA members. The original target of a 25 percent increase in shares sold per year was derived from the number of CSA members in Madison, WI, where FairShare CSA Coalition plays a meaningful role in consumer education. PACSAC learned that FairShare CSA Coalition's marketing efforts were significant, but rebates from insurance companies on share purchases were an important factor in the high numbers of CSA members in the area. Lacking financial incentives similar to Madison, the 25 percent increase outlined by the grant was too high to be achieved by education alone.

A solid organizational structure that includes CSA members as well as farmers is necessary for the successful completion of PACSAC projects. This project was not staffed until February 2013 and it immediately suffered from a lack of funding. Both were the results came from a lack of organizational structure. PACSAC received additional grants that brought in consultants who helped build a broader board and develop more structure and clarity around mission and purpose.

In addition to successfully marketing CSA, PACASC is ending this grant with more stability, structure, and community support.

Current CSA members are important ambassadors for CSA and farmers could better utilize members' networks for marketing. As part of its marketing campaign, PACSAC provided farmers with monthly ideas and messages to engage members in sharing CSA information with their social networks. At times farmers expressed frustration with marketing to members, and more work needs to be done to educate farmers about the value of marketing through existing members' networks as well as developing the right tools and projects to engage members in CSA outreach.

Small specialty crop producers need additional marketing and communications support to find and retain customers. Through evaluating farm websites and social media channels, PACSAC learned than many were not kept up-to-date, and most farms were not communicating with members during the winter. Regular communication with members throughout the year, even after the growing season, is important for retaining members. Tools such as websites, blogs, or social media channels must be updated or a web-savvy public will think a farm is no longer in business. Evaluations from PACSAC's communications workshop showed that farmers appreciated the time away from the farm to work on communication goals, learn from each others' successes, and discover new tools to help them better utilize social media channels.

Year-round promotion is important as more farms offer winter or additional seasonal options. The main CSA marketing season is January through April, but ten farms in 2014 offered late season and winter shares. As more farms engage in farming year round, on-going CSA marketing is more important.

Having fiscal sponsorship from the City of Portland enabled PACSAC to complete this project. Additional support from the Bureau of Planning and Sustainability provided valuable capacity in the form of professional services, office space, and materials.

Long-term, on-going work is necessary to brand CSA and demonstrate its value. Retailers in different parts of the country have adopted the language of CSA when selling pre-packed produce boxes, often referring to their business as "like a CSA." While not as common in Oregon, new companies are developing sites in our state and often don't purchase directly from local specialty crop growers. Consumers need on-going education that CSA is a relationship with a local farm that provides high quality produce, directly from the farm, at prices that benefit farmers and consumers.

ODA-S19 Advertising for farmers markets in the Willamette Valley– *Final Report – APPROVED – 2/26/2014*

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PROJECT SUMMARY

Farmers markets are vital to our region's specialty crop farmers, many of whom rely on farm direct sales as their main source of income. As markets have proliferated throughout the Willamette Valley, farmers have come to rely on them as a critical component of income that sustains their businesses, yet most farmers markets are low-budget operations with limited funding, small or volunteer staff, and minimal outreach and promotional tools.

Overall, only a small percentage of the population buys their vegetables, fruit, nuts and herbs at farmers markets. In order to ensure that small specialty crop farmers in the Willamette Valley are successful, we must increase the demand for the crops they grow. We conducted a broad-based advertising campaign promoting farmers markets in the Willamette Valley. This campaign educated consumers about the benefits of purchasing fresh local food directly from the growers and featured actual farmers as *stars* of the campaign.

Today, the use of SNAP benefits is at an all-time high with Oregonians receiving more than one billion dollars per year in food stamps, though many recipients are not aware they can use their funds on fresh fruits and vegetables at their local farmers market. This campaign placed advertisements where SNAP recipients were likely to see them.

Ultimately, as demand increases, farmers can reliably diversify and expand their specialty crop production, attend more and larger markets, garner higher prices for their crops and increase their overall success.

This advertising campaign intended to draw more shoppers to farmers markets, increase sales and consumption of edible specialty crops and support the health of our economy, environment and people.

PROJECT APPROACH

Each item in our proposed work plan was accomplished. Here are highlights:

- We promoted specialty crops and specialty crop farmers by including them exclusively in all of our advertisements . Eight specialty crop farmers were featured in our advertisements:

- Four farmers spoke about what they grow, where they sell and the importance of selling at farmers markets in our radio ads.
- Crops listed in our radio ads include: salad greens, asparagus, rhubarb, beets, carrots, fava beans, shell peas, potatoes, grapes, winter squash, cabbage, strawberries, leeks, raspberries, blackberries.
- Phrases about farming spoken in our radio ads: "seeds well adapted for our Willamette Valley"; "Oregon farmers grow some of the best produce and plants in the world"; shoppers recognize farmers for the "value of producing food"; "fresh Oregon produce and plants".
- Five additional farm families participated in a photo shoot and were shown in our billboard and online advertisements. They were shown on farms, holding or working with their crops, all specialty crops.
- Some of the crops shown in our ads include: fava greens, carrots, beets, artichoke, kale, fennel, cauliflower, romesco, mustard greens, leeks, blueberries, rapini, apples, hazelnuts, kohlrabi, strawberries, blueberries, radishes and lettuce.

- Fifteen markets in the Willamette Valley submitted shopper counts from 2012 to establish baseline shopper count data and for 2013 as comparison to show results. *See Attachment #3 shopper counts.*
- Matching funds were received, in total of $48,600.
- Market managers from farmers markets in Springfield, Corvallis/Albany, Hillsboro, Hillsdale (Portland) and Beaverton made up our campaign management team. The group met twice to review creative and advise on messaging and design.
- RunSpotRun was engaged as the agency for the campaign. They assembled all creative and production resources, recommend and purchased ad space.
- At the Oregon Farmers Market Association's annual meeting on March 1, 2013 25 folks from markets around the Valley heard a presentation about the campaign and provided their feedback which influenced final design and messaging.
- Nine farm families from Dexter to Forest Grove participated in either photographs or interviews which became radio, print or online advertisements
- ***In Local We Love*** was selected at the campaign theme and a logo was produced.
- A website was built and launched, including a links to each market in the Willamette Valley. Visit inlocalwelove.com
- Advertisements ran on a selection of websites. *See Attachment #1 online advertising results.*
- Advertisements ran on radio stations and billboard. *See Attachment #2 radio and billboard purchases and run dates.*
- Shopper survey was completed and is discussed below.

Also attached with this report area files showing our campaign theme and logo *In Local We Love*, photographs of the farmers who will be depicted in the advertisements and samples of two draft radio spots.

GOALS AND OUTCOMES ACHIEVED

Our actual accomplishments fulfilled our purpose, expected outcomes and potential impact, although the exact methods of advertising changed slightly to better fit our budget. We focused our advertising on radio, billboards and online website ads as described here:

Radio – Ads ran at various intervals between late May and mid-September in the following markets: Eugene/Springfield, Corvallis/Albany, Salem and Portland. *See Attachment #2* for specific buys and timeframes in each market. The Portland buy was with Entercom stations which sweetened the deal with a public affairs show interview (which Trudy Toliver did), online ads, a listener website contest and at-market appearances at four farmers markets in the Portland metro region. The markets that hosted the radio crews were delighted for the extra publicity on those days and to make personal connections with the stations.

Online – Ads ran at various intervals from mid-June through late October on a variety of websites that target moms and people interested in food and health. Ideally, people who see the ad are interested and click on the ad to go to our site. **Our click-through rate was four times the industry average.** *See more details below and Attachment #1 for online ad purchase details***.**

Billboards – Ads ran at various intervals between mid-June and late September in the following markets: Eugene/Springfield, Corvallis/Albany, Salem and Portland. *See Attachment #2 for specific buys and timeframes in each market.* In Beaverton and Salem we purchased space on electronic boards, saving some production and increasing reach.

Website Hits – Originally we planned to drive ad campaign viewers to the Oregon Farmers Market Association website. We felt this would build interest in that site long term. Due to the design of the site and the difference between their statewide membership and our valley-only campaign – it was determined that a separate site was most appropriate. We scrambled to put one together and it seemed to work out just fine.

Website traffic corresponded to the advertising. The highest number of visits came during the first month of the campaign, when messages were fresh and the three-prong campaign was launched both online and on the radio and the first down-Valley digital outdoor boards went live. A similar bump in traffic was seen in August, when the first Portland area billboards went up. Although the campaign has officially wrapped up actively advertising, visitors are still coming to the site (129 as of October 23). This is encouraging and shows that the campaign continues to have lasting impact. The *In Local We Love* website will remain in existence as a resource for

Willamette Valley residents looking to find a farmers market in their area. See Attachment #4 for more details on hits to the website and learn more about measures below.

Shopper Survey – Originally we planned to survey shoppers at 10 markets on how they heard about the market they were attending. That was an overly ambitious intention; due to limited project management staff time and limited staff time at the various markets, surveys were not completed except for at some Portland markets. Four Portland area markets asked shoppers how they heard about the market once per month during May through September. Of the 273 shoppers who said they were new to that market, less than 1% of them said they saw an advertisement about the market. The most common answer was that they saw it due to driving by or living nearby.

Our proposal committed to two measurable goals: increase in shoppers at farmers markets and number of visitors to the website.

Goal 1: Increase the number of shoppers at farmers markets in the Willamette Valley.

Benchmark: Shopper counts in at least 10 farmers markets evenly distributed throughout the Valley and of varying sizes and years of existence will be performed from May – Sept 2012.
RESULT: This was accomplished.

Performance Measure: Shopper counts will be done at least every other week of a market at each entrance for 10 minutes every hour the market is open, from May – Sept 2013.
RESULT: Some of the smaller markets may not have been able to meet this standard. Most markets rely on volunteers to collect counts and that is not always reliable.

Target: Increase shopper visits overall by 3%.
RESULT: **This goal was not met.** Even in a year with very good weather comparatively, all but two markets that provided shopper counts had a lower number of shoppers in 2013. Five markets saw a less than 2% change in shopper counts while one small market reduced shoppers by 84%. *See Attachment #3 shopper counts*.

Goal 2: Attract potential shoppers to the Oregon Farmers Market Association website advertised in this campaign. Website visitors can search for farmers markets throughout the state.
RESULT: Ads drove shoppers to a special *In Local We Love* website which provided a search and link to Willamette Valley markets.

Benchmark: Analytics will track number of website hits in May – Sept 2012.

Performance Measure: Track the number of hits to the website, their point of origin and actions on the site in May – Sept 2013.

RESULT: Between June 11 and October 23, the website had 2237 visitors. Due to how the online advertising works we cannot determine exactly from which websites our click- through visitors come. Of the 122 visitors who keyed-in a search term that was tracked, 56% of them used some form of the words "in local we love." Of the 905 websites known to have referred visitors to the *In Local We Love* site, 37% were from farmers markets in the valley. The remaining were from a variety of sites including our radio advertising partners, ODA's AM Northwest celebrate Oregon promotion, other local TV and radio stations, social media channels and various other sources.

Once visitors landed at InLocalWeLove.com 19% continued on to a local farmers market's site. That means that 408 website visitors clicked on to the link of a Willamette Valley farmers market and landed directly at their website. *See Attachment #4 which includes a list of which farmer's market websites were clicked on.*

Target: See at least a 50% increase in hits to the site. It currently is not heavily advertised. Specific target to be developed based on commonly expected impact for an advertising campaign of this type.
RESULT: Since we did not use the Oregon Farmers Market Association site, we were not able to use their numbers as a baseline. We also were not able to identify a standard for a campaign of this size and geographic range. Our online advertising did however provide an industry standard to which we compare some results. For online advertising, commonly just 0.015% of the ads that post have people click on them and go to the advertiser's website. **Our click-through rate was 0.06% which is 300% above the industry standard.** *See Attachment #1 for details.*

BENEFICIARIES
As this broad based advertising campaign spanned the approximate 100 mile length and 75 miles width of the Willamette Valley all farmers markets in that area benefited from the ads. By reminding shoppers to visit a market and build relations with local farmers, possibly all specialty crop growers in the Valley also benefited.

The data proving any impact from the campaign on the beneficiaries is shown in the results of online activity in *Attachment #4.*

LESSONS LEARNED
Overall, we are pleased with the campaign. Although the shopper counts at most markets did not increase that can be due to numerous other factors. Additionally, since there was not a great deal of chatter from folks seeing/hearing the campaign, we believe that we may have spread the funds too thinly. In the future, it may take about $200,000 to adequately advertise all along the Willamette Valley. Another strategy may be to choose only one advertising medium, like radio and saturate that market instead of buying many different media.

We also learned some lessons along the way. The creative person at the ad agency developed a brand identity for the campaign – *In Local We Love.* A lot of time went into the design of the logo and how it would be used. We soon realized that this campaign was too small to warrant a "brand." A simple call to action message and website would have been adequate. Some of the time and money spent on a "brand" may have been better spent on a high impact call to action or additional advertisements.

We also learned to assure that the ad agency had all of the skills needed to do each piece of the campaign. The creative director's expertise was in radio production and those were the star of the show. We scrambled to get the website up and experienced delays in launching the billboards and online ads due to poor ad agency communications with the design and production team. Ultimately, the billboard and online spots started about a month later than we planned but all ran longer into September.

We originally planned to buy ads on public transit but found it more cost effective to purchase only billboards. Print ads were also considered, but determined to be far to labor intensive to learn each publication's ad sizes and timelines. We focused instead on the online ads which seemed to benefit the campaign.

Printing posters with the campaign branding was also found to be unnecessary as each farmer's market produces their own posters, so additional ones that were not specific to a given market would not be useful.

Limited staffing kept us from conducting in-depth shopper surveys at most of the farmers markets.

ODA-S20 Reducing Market Barriers for Collective Sales of Oregon Floricultural Products to Mass Merchandisers in the Puget Sound Area– *Final Report*

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PROJECT SUMMARY

In 2012, when this project began, approximately 80% of cut flowers sold in the US were imported, mainly from countries with cheap labor costs and government subsidies for cut flower production. Washington and Oregon cut flower farmers had found it increasingly difficult to retain local market share. With country of origin labeling nearly nonexistent, consumers were often unable to ascertain where their flower purchases originated or how they were grown. Aside from direct marketing to the end user, local specialty cut flower farmers had few tools available to differentiate themselves in the market place. In 2011, a group of 12 Washington and Oregon cut flower farmers had formed the Seattle Wholesale Growers Market Cooperative (SWGMC) in order to pool resources to market their products more effectively. The co-op requested funding for this project primarily to help Washington and Oregon cut flower producers overcome barriers restricting their ability to compete in the mass merchandising sector.

This project was designed to help SWGMC survive and grow in its very early years - particularly by opening sales channels to large scale grocery customers. Three years ago, in a region where consumers had made great strides in recognizing and valuing local food, local flowers were largely unrecognized as part of the farm to table movement. Timing was critical to support Washington and Oregon's specialty cut flower farmers in efforts to renovate and rebuild their industry.

For two successive years in 2011 and 2012, SWGMC farmers partnered with Washington State University faculty in a SCBGP project to create curriculum and produce a two-day intensive Cut Flower Growers School. This project built on that initial effort by offering another Cut Flower Growers School in 2013. All three workshops were well attended and received positive reviews from attendees - educating over 140 industry stakeholders in the basics of specialty cut flower production and marketing.

PROJECT APPROACH

At the beginning of the project, SWGMC hired a Mass Merchandising Program (MMP) Manager to develop a program geared toward sales of floral products to grocery chains in the Puget Sound area. SWGMC worked with its staff to conduct a feasibility study and develop a detailed program plan, which was then revised for each year of the project's duration. SWGMC staff worked closely with select floral buyers to develop a number of product lines, including mixed

bouquets and growers' bunches promoting popular seasonal crops. The co-op hired contractors to develop branding and packaging that would differentiate its floral products as local and certified sustainably grown. Each year SWGMC conducted outreach to farmers to coordinate production and delivery for the grocery sales program, collected and compiled MMP sales data and polled growers to track project progress. Sales through the MMP were impressive in the first year, meeting 40% of project sales targets. However SWGMC had to take a step backward in developing its MMP program as it lost its primary customer from that first year. The co-op regrouped, replaced its MMP Manager with a person who had a higher level of experience and excellent track record developing local floral sales in grocery, and invested staff time in developing long-term relationships. As a result MMP sales nearly doubled from year two to year three. SWGMC has commitments for continued strong growth next year and beyond.

In coordination with the launch of its Mass Merchandising Program in the spring of 2013, SWGMC oversaw contracts for photography and website development for the co-op - aimed at providing information about local flower farmers and seasonal availability of Washington and Oregon floral products. SWGMC maintained and updated the website - as well as packaging and support materials for its Mass Merchandising Program - periodically, throughout the duration of the project. The website has provided an important communication tool for the growth and development of the co-op generally, as well as supporting the MMP.

SWGMC developed curricula for and held six educational workshops for flower farmers including one two-day Cut Flower Growers School in Washington aimed at educating new and beginning growers; sustainability workshops in both Washington and Oregon; and season extension workshops in both Washington and Oregon. The sustainability workshops were held in partnership with Salmon-Safe and Stewardship Partners and helped flower farmers learn about steps involved in attaining Salmon-Safe certification. SWGMC then oversaw contracts in both Washington and Oregon for Salmon-Safe assessments of 19 Washington and Oregon flower farms - of which 18 subsequently attained Salmon-Safe certification.

With support from Salmon-Safe and Stewardship Partners, SWGMC held Salmon-Safe publicity events at a Portland area grocery store in 2014 and two Seattle area stores in 2015. At these events, SWGMC polled floral consumers about their buying preferences for local and certified sustainably grown floral products. All three events yielded similar consumer feedback. Most were unfamiliar with the Salmon-Safe label, however once educated, many were interested and supportive. The "buy local" message seems to be catching on but there is less customer demand for sustainably grown flowers. For customers to recognize and value Salmon-Safe certified flowers, more work needs to be done to elevate their profile with customers in the grocery setting. Following the 2015 events, SWGMC produced an article which was published in The Produce News, entitled, "Seattle Wholesale Growers Market forges partnerships with Northwest grocery chains."

The Association of Specialty Cut Flower Growers (ASCFG) provided financial and staff support for a 2012 season extension workshop held in Washington.

Salmon-Safe's Managing Director, Dan Kent, worked closely with SWGMC to develop and deliver two sustainability workshops - one in Washington and one in Oregon. Stewardship Partners provided additional support for the Washington sustainability workshop. Efforts and support in the form of staff time and printed materials provided by both organizations contributed to a positive response by growers to the Salmon-Safe certification program.

Salmon-Safe provided design for printed in-store signage promoting sustainably grown flowers. Both Salmon-Safe and Stewardship partners provided printed support materials and staff time to plan and execute in-store promotional events.

This project did not benefit other commodities other than specialty crops.

GOALS AND OUTCOMES ACHIEVED

Goal: Increase the amount of floriculture products collectively sold to mass merchandisers:

During the first year of the project, SWGMC invested resources in partnerships with two Puget Sound area grocery chains and made 40% progress toward MMP sales targets. Sales were steady and solid with Town & Country Markets. However, the co-op learned some hard lessons that first year. It had selected PCC as its primary business partner. The store chain had a strong advertising message of supporting local farmers to its customers, but chose not to invest in staff and resources to properly handle and display floral products. After making a concerted effort to educate and foster a sustainable relationship with PCC, SWGMC elected to cut its losses and seek other sales avenues.

In year two, SWGMC regrouped and reworked its marketing and branding strategy. MMP sales numbers took a step backwards to just 17.5% of sales targets as the co-op worked on developing sustainable long term strategies for marketing its products to the grocery sector - with a focus on delivering top quality products and specializing in straight bunches of products that have high consumer appeal and are not easily shipped long distances. Additionally SWGMC invested staff time in developing long-term relationships with companies that have trained staff and adequate facilities for handling floral products, and a strong track record of supporting local farmers.

In year three, SWGMC built on strategies established in year two with steady, but sustainable regrowth.

Goal: Several new jobs will be created as a direct result of this project.

In keeping with the three year trajectory of sales through the MMP, jobs added were strong, achieving nearly half of overall project targets in year one. In year two jobs added numbers fell sharply backwards, then rebounded with solid growth in year 3 for seasonal jobs.

Goal: Increase the sales of flower growers through Salmon-Safe certification and increase the availability of certified sustainably grow local flowers to Puget Sound area consumers.

SWGMC partnered with Salmon-Safe and Stewardship Partners to develop and deliver sustainability workshops in Washington and Oregon - specifically to educate flower farmers about the Salmon-Safe program. SWGMC then contracted with both organizations to provide assessments to Washington and Oregon flower farms. As a direct result of these activities, farmers universally embraced the Salmon-Safe program.

This project had an overall goal of building a self-sustaining Mass Merchandising Program by project completion. SWGMC's overall business growth has been robust over the past three years, with MMP sales accounting for a projected 17% of overall sales in 2015. The program is now on sound footing and set-up to grow on a self-supported basis in future years, providing an important revenue stream for the co-op and its farmer members.

Although shifts in consumer awareness come slowly, SWGMC believes the Salmon-Safe label provides a strategic differentiation in the marketplace - a value which will accrue over time as brand awareness grows.

SWGMC and its partners met and in many cases exceeded all work plan activities geared toward accomplishing project goals. Although not all project goals were attained during the duration of the project, SWGMC projects that revenues and jobs added targets will be attained within the next few years as the self-sustaining Mass Merchandising Program that this grant helped build continues to grow and benefit Washington and Oregon cut flower farmers.

Baseline: Estimated Mass Merchandising annual sales of $90,000 in 2012. (Actual sales were $97,800.)
Achievement: $158,013 ($130,873 Washington and $23,118 Oregon).
Target: $520,000 ($400,000 Washington and $120,000 Oregon).

Baseline: No jobs existed for SWGMC's Mass Merchandising Program.
Achievement: .675 year-round full time equivalent jobs (Washington) and 4.2 seasonal full time equivalent jobs (3.95 Washington, .25 Oregon) were added in year 3 of this project.
Target: A total of 3 year-round full time equivalent jobs (Washington) and 8 seasonal full time equivalent jobs (5 Washington, 3 Oregon) to be added as a direct result of this project.

Baseline: One SWGMC flower farmer was certified Salmon-Safe before this project began.
Achievement: 18 flower growers (13 Washington, 5 Oregon) became Salmon-Safe certified by project completion.
Target: 8 flower growers (6 Washington, 2 Oregon) to become Salmon-Safe certified during the project.

Baseline: 19% of products sold to grocery through SWGMC's Mass Merchandising Program were certified Salmon-Safe.
Achievement: 100% of products were certified by project completion.
Target: 50%.

BENEFICIARIES

This project was proposed and administered by farmers in an attempt to help SWGMC, a grass-roots, start up producer's cooperative establish a self-sustaining foothold in the Puget Sound floral marketplace. While they faced many challenges, the farmers felt that accessing large scale buyers was key to the survival and growth of the business and also the most difficult sector to break into without assistance. The challenges turned out to be greater than SWGMC had anticipated and the co-op would likely not have survived its early years without the assistance that this project provided. This project has directly benefited SWGMC's member farmers, their employees and SWGMC staff by providing jobs and helping to create self-sustaining channels for sales of floral products both through the Mass Merchandising Program and the market overall. As the co-op grows, SWGMC expects that USDA's investment in this project will increasingly benefit Washington and Oregon's specialty crop economies for many years to come.

Additionally, many established and beginning farmers of Washington, Oregon and other states benefitted from educational and networking opportunities provided by the workshops that this project funded. Washington and Oregon farms, both within and outside the co-op, benefitted by receiving Salmon-Safe assessments, giving them tools for differentiating their products in the marketplace.

An expanding chain of floral consumers of the Puget Sound area - from florists and event designers to grocery customers - have benefitted by gaining access to increased quantity and diversity of high quality, seasonal Washington and Oregon floral products. Although progress is slow, consumers are changing their buying habits to include more local flowers, as evidenced by the more than 40% year over year revenue growth that SWGMC has experienced in 2015.

This project played a key and timely role in supporting SWGMC through its early startup years and in helping the young producer's cooperative to transition from being owner operated to employing professionally trained management and staff. SWGMC employed 1 year round FTE employee with $296,800 in sales revenues for 2011. At project completion, SWGMC employs 3.25 year round FTE positions with $920,000 in sales revenues ($668,000 from Washington and $118,000 from Oregon flower farms) projected for 2015. The company's customer base has grown from 269 to 514 - allowing floral designers and industry professionals at all levels improved access to local floral products. SWGMC projects steady and strong growth to continue in future years as the cooperative establishes itself as the leading wholesaler of local floral products to the Puget Sound area.

200 farmers, florists and industry stakeholders attended and benefitted from 6 workshops supported by this project. Workshops and farm tours were hosted on 5 different Washington and Oregon flower farms, with 20 flower farmers (6 from Washington and 8 from Oregon) compensated for teaching and providing farm tours. 71% of attendees returned post attendance surveys. 94% of respondents indicated that the workshop provided them with information helpful to improving their farm businesses, with 48 respondents specifically remarking on the benefits of learning from other farmers in an "on farm" setting.

19 flower farms in Washington and Oregon received Salmon-Safe assessments, with 18 achieving certification. Although financial benefit measured in increased sales is difficult to quantify, regional and national chains such as New Seasons Market and Whole Foods now recognize the Salmon-Safe label and offer preferential vendor status to certified producers.

LESSONS LEARNED

SWGMC learned some tough business lessons through this project - mainly that it had underestimated the lack of consumer awareness about where their flowers come from and how they were grown, and the heavily price driven nature of grocery floral. Floral is the lowest profit margin and consequently the lowest priority department for most grocery chains. Cheap imported product is abundantly available in the Puget Sound area - both from South America and through the UFG Canadian Flower Auction just across the border. Without educated consumers, even higher end grocery chains claiming to value local farmers take short-cuts in floral. While consumer awareness is changing slowly, SWGMC underestimated the scope of these barriers and the timeline needed to effectively overcome them.

Developing quality business relationships takes both time and discernment. SWGMC's relationship with PCC Natural Markets appeared initially promising, but ultimately was not sustainable because the company did not have trained floral buyers or adequate facilities for handling floral products and chose not to invest resources in building a program. In contrast, SWGMC's relationship with Town & Country Markets has grown slowly and steadily over the past three years - because that company has adequate facilities, values supporting local agriculture and has invested the resources both to educate their customers and to build a long term, sustainable relationship with the co-op. As consumer awareness grows, so does the demand for local floral products. SWGMC is seeing increasing opportunities to develop mass merchandising sales channels. It now chooses new partners slowly and carefully - upholding the farmers' needs to sell their products at profitable price points.

SWGMC has both contributed to and benefitted from a growing "farm to vase" movement in the northwest and throughout the US. Attendees of the workshops that this project funded have established farms and floral businesses, several of which now regularly purchase and sell through the co-op as an increasing network of farmers and florists builds in the Pacific Northwest region.

As it grows, SWGMC continues to provide leadership by example for specialty cut flower farmers around the country. In 2014 SWGMC Board Chair Diane Sukovaty presented on a panel at the ASCFG National Convention in Delaware titled "Cooperative Wholesaling Among Farmers" and has subsequently offered one-on-one mentorship to 5 grower groups around the country interested in the unique collective marketing model that SWGMC offers.

In prior trials and during the first year of the project, SWGMC's Mass Merchandising Program relied mainly on bouquet sales to generate impressive gross revenue. At the end of the first year of this project, SWGMC hired a new program manager with extensive business and marketing experience. Analysis at that point revealed that labor inputs for SWGMC staff to construct bouquets were not profitable. At the new manager's recommendation, the co-op elected to focus on selling straight bunches of grower products for the second two years of the project - significantly reducing gross revenues and short-term jobs added, but building a program which is currently profitable, self-sustaining and growing steadily.

In this process, the farmers of SWGMC learned that grocery floral is an extremely rugged business. Having highly experienced and motivated management, being willing to recognize mistakes and adapt, and taking a slower, steadier approach to building a program have been critical strategies for company survival and growth.

ADDITIONAL INFORMATION

$4,337 of cash match was provided by the Association of Specialty Cut Flower Growers. Funds were spent on transportation and additional meals costs for workshop attendees of the 2012 Washington Season Extension Workshop.

SWGMC provided a total of $113,942 in cash match including $63,625 for building and facilities lease costs ($15,840 in year 1 and $47,785 in year 2); $48,419 for salaries ($11,024 in year 1 and $37,395 in year 2) and $1,898 in bookkeeping expenses.

SWGMC provided $3,507 of in kind matching funds in the form of co-op member volunteer hours and facilities donations for workshops.

Salmon-Safe contributed a total of $22,776 ($19,176 in-kind and $3,600 cash) matching funds toward this project in the form of grower outreach, assessment coordination and reporting, marketing planning, design services for grower workshops and technical review of grower pesticide use and reduction strategies.

http://seattlewholesalegrowersmarket.com/

http://www.seattletimes.com/business/agriculture/flower-farmers-co-op-is-a-growing-success/

http://fieldtovase.com/notes-ascfg-cooperative-wholesaling-panel-jello-mold-farm/

ODA-S21 Expanding Market Opportunities for Specialty Crops through Development of Effective Farm to School Garden Programs – *Final report*

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PROJECT SUMMARY

"Farm to school" is broadly defined as a program that connects schools (K-12) and local farms; providing students with agriculture, health, and nutrition education while supporting local and regional farmers. The purpose of this project was to provide farm to school and school garden program in Oregon with training, technical assistance and resources to incorporate more Oregon-grown fruits and vegetables into meals served in schools and to provide effective educational programming to promote these crops.

As the Oregon State Lead Agency for the National Farm to School Network, the Willamette Farm and Food Coalition (WFFC) is charged with providing technical assistance and support to farm to school and school garden programs in Oregon. More and more schools in Oregon are becoming interested in implementing farm to school and school garden programming. In the year prior to our proposal, WFFC received over 80 requests for technical assistance and support, as well as multiple requests for presentations at state-wide conferences. Funding at the time did not allow WFFC to respond effectively to these requests, nor did state agencies have adequate resources to address the need. A survey of the Oregon Farm to School and School Garden Network in early 2012 showed that 23 programs across the state, including farms, schools, and non-profit organizations needed additional technical support from WFFC, particularly in the areas listed in our Work Plan.

The goals of this project were to increase the capacity of Oregon farms, schools, and produce distributors to incorporate Oregon-grown fruits and vegetables into school meals, and to develop effective educational programs which promote these products.

PROJECT APPROACH

Our objective was to partner with state agencies and other community-based non-profit organizations to provide technical assistance, outreach, and support to at least 150 farm to school and school garden stakeholders (farms, distributors, schools, and community-based non-profits). These resources and support increased their capacity to incorporate more Oregon-grown fruits and vegetables into meals served in schools and to develop effective educational programs to promote these crops. Support was provided in the form of training sessions, site visits, web-based resources, conference presentations, and personal communication. WFFC also **s**erved as the co-lead for the Oregon Farm to School and School Garden Network (OFSSGN) providing

networking opportunities and dissemination of resources and materials to participants, as well as convening and hosting the annual meeting of the OFSSGN.

Megan Kemple, WFFC's Farm to School Program Director and the OFSSGN Steering Committee convened an all-day annual meeting of the OFSSGN in Hillsboro, Oregon in November 2012 and in Salem, Oregon in November 2013. The 2012 meeting was attended by 55 people, including food service managers, school garden educators, non-profit staff, and state agency partners. Of those who attended the 2012 meeting and completed evaluations, 23 out of 24 said they "gained resources or made a valuable connection with another person at the meeting". (The agenda and feedback were submitted with our first biannual report.) At this meeting Megan facilitated development of "Goals for Farm to School and School Gardens in Oregon." (This document was submitted with our first biannual report). The 2013 meeting was attended by 76 people, including school garden educators, non-profit staff, school food service staff, and United States Department of Agriculture and state agency partners. (A photo and agenda from the November 2013 meeting were attached to our third biannual report.) And in January 2014 the OFSSGN convened an Oregon School Garden Summit with over 200 attendees.

Megan posted approximately 159 email messages (approximately 6 per month) to the email OFSSGN listserve during the reporting period, providing information about upcoming events and webinars, grant opportunities, and program resources.

Megan Kemple, WFFC's Farm to School Program Director presented or conducted outreach at 11 conferences during the grant period, including the Oregon School Nutrition Association Annual Meeting to (March 2013 and 2014), Small Farms Conference in Corvallis (February 2013 and 2014), the Local Food Connection in Eugene (February 2013 and 2104), and a workshop titled *Building and Sustaining Effective Statewide Networks* at the National Farm to Cafeteria Conference (April 2014).

Megan Kemple also presented in 4 webinars on the following topics: Farm to School Program Planning and Evaluation; Farm to School in Oregon; Getting Started with Local Purchasing; and a USDA Farm to School webinar on Forward Contracting . Approximately 505 people were provided with resources through this outreach. Megan presented at the Oregon FoodCorps service members orientation in September 2014 on Farm to School in Oregon (history, successful programs and resource people) and on getting started with local food purchasing and promotion in a school setting.

Megan Kemple provided one-on-one technical assistance to approximately 135 individual farm to school stakeholders, via phone, email, and by providing web-based resources. Megan provided more intensive support to 15 school districts in securing Oregon Farm to School and School Garden Grants and implementing activities. The grants provide funding for

reimbursement for purchases of Oregon-grown and processed foods and educational programming. Megan developed a "Getting Started with Local Purchasing" hand out which is now posted on Oregon Department of Education's (ODE) website. (attached to first biannial report). The School Garden Project of Lane County (SGP) provided technical assistance and support for starting and successfully maintaining school gardens and implementing garden-based after school programs to 28 school gardens in Oregon. SGP disseminated its school garden curriculum and after school garden manual at the OFSSGN annual meeting and via the OFSSGN email listserv.

Growing Gardens' (GG) Youth Grow Manager implemented its School Garden Coordinator Certificate Training. Twenty-one participants enrolled for the training held August 19-23, 2013 in Eugene, Oregon. Eighteen participants (86%) completed the training receiving a certificate. Each participant received 35 hours of training on the following topics: Introduction, History of Farm to School Gardens and School Gardens 101, Community Organizing, School Garden Tours, Teaching Students in Outdoor Classrooms, Connecting Garden Based Activities to Core Curriculum, Food Safety in the Garden, Garden Infrastructure, Garden Basics, Resource Development (Funds and Volunteers) and Project Planning, Student Presentations and Wrap-up. Each participant received a comprehensive School Garden Coordinator Certificate Training Manual, a copy of Growing Gardens Youth Grow Lesson Plan manual (after-school program manual), a copy of How to Grow a School Garden and Schoolyard Mosaics. These materials were used throughout the training as curriculum. Offering this training outside of the Portland metro area for the first time revealed that this training can be adapted to other communities and is very relevant and unique. (Participant affiliations, presenters and participant feedback were attached to our second biannual report.)

Rick Sherman, Farm to School and School Garden Coordinator with Oregon Department of Education (ODE) developed a School Garden Food Safety Manual to provide guidance on safely handling and consuming food in the garden and for incorporating school garden produce into meals served in schools. The manual was reviewed by school garden stakeholders and food safety experts including ODA and WFFC. ODE also provided WFFC with Oregon Harvest for Schools materials, highlighting Oregon-grown fruits and vegetables, including approximately 80 posters and 2500 family newsletters which WFFC has distributed to schools in Oregon.

WFFC gathered benchmark data about economic value of specialty crops purchased by schools at the beginning of the project (11-12 school year data), mid project (12-13 school year data), and at the end of the project (13-14 school year data). WFFC also tracked the variety of Oregon-grown specialty crops purchased by schools using a survey, which asked schools to identify which Oregon-grown crops they purchased in the 2013-2014 school year and a previous year, for comparison.

GOALS AND OUTCOMES ACHIEVED

Our **expected measurable outcomes** were:
GOAL: To increase the variety of Oregon-grown specialty crops purchased by Oregon schools.
PERFORMANCE MEASURE: Track the variety of Oregon-grown specialty crops purchased by schools using a survey, which will ask schools to identify which Oregon-grown crops they purchased in the 2013-14 school year and the previous year, for comparison. (This performance measure was revised and approved on 3/22/13)
BENCHMARK: A survey by Oregon Department of Education in 2011 indicates that 84 of the 113 school districts who responded are purchasing at least one Oregon agricultural product.
TARGET: At least 23 school districts (20% of the number surveyed by Oregon Department of Education in 2011) will increase the variety of Oregon-grown specialty crops they purchase.

Actual results were that 30 school districts (26% of those surveyed by Oregon Department of Education in 2011) increased the variety of Oregon-grown specialty crops they purchased.

We expected the economic impact of the project to be an increase of at least $86,500 in specialty crop sales by Oregon farms to Oregon schools during the grant period. The actual increase in specialty crop sales by Oregon farms to Oregon schools during the grant period was **$728,340.** More detailed information about this data is attached to this final report.

According to the USDA Farm to School Census, Oregon schools lead the nation in percentage of food budget spent on local foods. The Census shows that Oregon school districts are directing 24 percent of their food budgets to purchase local foods.

WFFC and ODE also collected data about the number of educational programs promoting these crops. In addition to buying local products school districts in Oregon are promoting locally produced foods at school in general (44%), holding taste tests/demos of locally produced foods (37%), and conducting student field trips to farms (36%). Oregon Department of Education (ODE) conducted a survey and reports 516 school gardens in Oregon– 43 percent of the state's public schools.

BENEFICIARIES

- Farm to school and school garden stakeholders throughout Oregon, including farms, schools and school districts, nutrition services staff, non-profit staff, and educators benefitted from the support provided by WFFC and other partners. The ultimate beneficiaries of the project were Oregon fruit and vegetable growers and distributors, as well as the children who consume the fruits and vegetables.

- Farm to school stakeholders benefitted when they received technical assistance and resources to implement effective programs. WFFC provided this support to at least 505 farm to school stakeholders.

- Students benefitted by being connected to Oregon agriculture and with access to locally grown fruits and vegetables. The USDA Farm to School Census shows that 82 (67%) of the 123 public school districts in Oregon responding to the Census survey were involved in farm to school programs, representing about 714 individual schools with an estimated 366,066 children in attendance.

- Oregon's specialty crop growers, processors and distributors benefit when Oregon products are able to reach the school market. Specialty crop sales by Oregon farms to Oregon schools increased by $728,340 during the grant period.

LESSONS LEARNED

Oregon is a leader in the farm to school movement nationally. Megan Kemple, WFFC's Farm to School Program Director, is the primary person in Oregon providing technical assistance, training and resources to farm to school stakeholders. But she is part of a team of farm to school leaders in Oregon, who work well together and each play an important role in providing support to the farm to school and school garden programs. The Oregon Farm to School and School Garden Network annual meetings would not have been successful without support from the OFSSGN Steering Committee members. Oregon's School Garden Food Safety Manual was the result of the hard work of Oregon Department of Education. Oregon's farm to school and school garden leaders gather quarterly to share about their priority projects, so that they can collaborate and refer stakeholders to each other. These partnerships are the key to Oregon's success in the farm to school movement.

ODA-S22 Growing the Market for Specialty Crop Farmers and Value-Added Producers in Central Oregon – *Final Report*

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PROJECT SUMMARY

This purpose of this project was to grow the market for specialty crop farmers and value-added producers. This included growing the demand for and purchasing of specialty crops from local farmers by improving and expanding a regional marketing campaign while simultaneously growing demand and supply of crops. This was achieved by providing educational workshops and conference, technical support for GAP/GHP and Recipe to Market, and improving a regional marketing campaign for local food producers and consumers.

This project was motivated by the input and request by farmers for additional resources and support in increasing demand beyond their current abilities to reach out to consumers. The timeliness of this project was perfect as it piggy-backed on the ever-growing desire for locally produced food products in Central Oregon and the newly driven regional marketing campaign, which is heading into its fourth year.

PROJECT APPROACH

Objective 1: Workshops and Conference

During the grant period, there were 11 workshops provided for specialty crop producers through the OSU Extension Service *Living on a Few Acres* conference (2013-14). In 2013, there were a total of 312 participants with four 90 minutes workshops focusing on hop production, berry crops, table grapes, and growing in a greenhouse. In 2014, there were over 210 people with seven workshops focused on farm management; production; finance and business development; marketing; greenhouse management; branding and social media; and high tunnel production.

In 2013, the workshop series was rated 4.41 out of 5 overall. When asked if the workshops enhanced knowledgle of production strategies and/or land stewardship practices, it was rated 4.39. A total of 93% of the respondents indicated that they intend to implement three or more ideas as a result of attending LOAFA classes.

In 2014, 89% of the respondents indicated that the conference increased or enhanced their knowledge of production strategies, cost-share programs and/or land stewardship practices. 89% of respondents gave the overall rating of this conference as a 4 or better (range 1-5). 91% of respondents plan to implement 3 or more ideas that they learned from classes.

On October 25th, a 1-day conference was provided to 104 participants. The tagline of the conference was *Celebrate your Success, Define your Future*. The event offered opportunitites for famers, ranchers, and community members to define the future of local food in Central Oregon. The event was hosted by COIC, OSU Extension, Jefferson County SWCD, and the High Desert Food Farm Alliance. The morning portion of the event was dedicated to farmers and community members providing Ignite Talks™, which are 5 minutes long and 20 slides, about what they love about local food. Half of the partcipants were specialty crop producers and the other half were organizations, school, agencies, etc. A local food lunch was provided and break-out sessions followed. There were six 90 minute sessions that focused on soil, buying and selling locally, central oregon food hub, politicians talk, growing gardens and maximizing your health. The keynote speaker, James Cassidey a Soil Scientist from OSU, was a huge hit!

Objective 2: Increase skills development and certifications

GAP/GHP: The goal of this objective was to provide an ODA workshop about GAP certification and to provide support and financial incentives for farmers to get certified. After the workshop there was limited interest and no follow-up by producers. Feedback provided by attendees was that the GAP presentation by ODA was pessimistic, difficult to implement and contradicted other presentations (see lessons learned).

Recipe to Market: The goal of this objective was to support 20 students in the Recipe to Market (RTM) program by providing tuition, kitchen rental and student fees at the Food Innovation Center in Portland Oregon. Despite extended efforts to market this program, only 3 students were able to visit the Food Innovation Center on May 6, 2014. A follow-up RTM meeting was held, featuring a previous RTM graduate who spoke to the group on how to start a business, how to market through the use of Facebook, as well as branding and utilizing local resources. Ongoing food preservation classes are taking place through OSU Extension to educate and promote food safety procedures. Also, past graduates or RTM continue to mentor those interested in starting or expanding a business.

Objective 3: Increase crop competitiveness through a regional marketing campaign

A regional marekting camapign was successfully launched on May 4, 2012 by COIC through a private foundation grant. The project was then handed off to the High Desert Food & Farm Alliance to be jointly implemented in 2013, and fully taken over by the non-profit in 2014.

The recruitment of specialty crop producers was easy as this is an inexpensive way to market their products and farm. The recruitment of value-added producers was more challenging but with time and trust the Directory has become a valuable resource. In addition to printed the Directory, labels identifying “members” of the campaign were printed and handed out at the beginning of the farmer’s market season and throughout the summer. These are currently being underutilized but could be improved through more education and greater interest by consumers of “branding” labels.

Overall, this program has been a huge success by providing a reliable Directory that people ask for and turn to for information. Challenges that were overcome during the duration of the grant was the timing of recruitment and diversifying the membership so as to make it more attractive to consumers while maintaining a high percentage of farmers and value-added producers.

Significant Contributions

- OSU Extension, COIC and Jeff County SWCD worked together seamlessly to develop a comprehensive project benefiting the target audience and expand the multi-stakeholder group to develop a Food Hub model that would provide a solid foundation by which specialty crop producers could market their goods through a wholesale marketplace.
- COIC (Katrina Van Dis) and OSU Extension (Dana Martin) were both asked by Governor Kitzhaber's Regional Solutions team to present information about the current state of the agriculture sector in Central Oregon and to describe why they think it is a priority for the region. The Regional Solutions Team determined that agriculture is a high priority for the Team, and have stated that they will help to establish the Food Hub.
- COIC facilitated the regional marketing campaign in conjunction with the High Desert Food & Farm Alliance (HDFFA). These two organizations maintain a strong and significant relationship that leverages support for regional producers through the marketing campaign as well as other related projects.
- OSU Extension faculty and staff organized field trips, face to face meetings and classes with information about the Recipe to Market Online program. The online program was presented through OSU's Professional and Continuing Education department which provides opportunities for certification upon completion.
- Debbe Chadwick with Jefferson County SWCD was instrumental in organizing and ensuring the success of the Central Oregon 2014 Food Summit. From start to finish the event was organized with the goal of reaching out and hearing from specialty crop growers and consumers locally

GOALS AND OUTCOMES ACHIEVED

Short-Term Activities Completed and Measurable Outcomes

- 11 workshops at the Living on a Few Acres conference in 2013/2014 with 522 participants
- An additional 6 workshops were provided through COIC and could be considered match and complimentary to this project
- 1 Food Summit conference was provided in 2014 with 104 participants on Oct 25, 2014
- 1 workshop held for producers on GAP/GHP presented by ODA with 11 participants
- 3 students were able to visit the Food Innovation Center on May 6, 2014
- 2 annual Directories were printed in 2013 and 2014; the total reach was 15,000 and 30,000 households respectively

Long-Term Activities

The goal of the annual Living on a Few Acres conference is to provide educational

opportunities for specialty crop farmer and value-added producers to increase their knowledge of production, farm management, and marketing practices. The conference attracts small acreage farmers interested in exploring opportunities for land use and food for local distribution.

The Central Oregon regional marketing campaign fosters relationships between farmers, ranchers, farmers' markets, local restaurants, institutions, grocers and consumers. The goal of the campaign is to **increase food security and economic opportunities** in Central Oregon. This campaign has been taken over by the High Desert Food & Farm Alliance and will continue to an annual Directory for years to come.

Quantitative Data

Our target goal for the Directory in 2013 was to increase membership by 20% for farmers and 15% for food businesses/consumers as compared to 2012; it was increased by 60% and 73% respectively. The target goal for 2014 was 25% for both categories; we achieved 94% for farmers and 8% for food businesses/consumers.

	2012 (baseline)	2013	*% Change*	2014	*% Change*
Directories printed	17,000	35,000	*105%*	55,000	*57%*
Readership	35,000	35,000	*0%*	70,000	*100%*
Members in directory	50	78	*56%*	87	*12%*
Spec. Crop Farmers	10	16	*60%*	31	*94%*
Ranchers	15	28	*87%*	25	*-11%*
Grocers	10	10	*0%*	9	*-10%*
Farmers Mkt	3	4	*33%*	5	*25%*
Value added producers	3	6	*100%*	9	*50%*
Café/Restaurant	12	16	*33%*	14	*-12.5%*
Wine/distillery/kombucha	NA	4	*NA*	5	*25%*
Other	NA	4	*NA*	2	*-50%*

The Food Summit Data:

Overall, 83% of survery respoandants said the Summit was rated "Great" with 42% stating that the class offerings were "Great", 59% said they were "Good". Every respondant was inspired by the morning IgniteTalk™ prsentations by farmers and community members. When asked how often people would like to attend the event, they preferred annually at $20/person. The class offerings were ranked in the following order (1 = Amazing, 5 = Poor)

- 1.57: Soil
- 2.29: Politicians Talk
- 2.00: Growing Gardens
- 2.00: Buying and Selling Locally
- 2.20: C.O. Food Hub
- 4.33: Maximizing your Health

Living on a Few Acres: See quantitative data in Project Approach

BENEFICIARIES

Collaborating partners and beneficiaries for the *Living on a Few Acres* workshop series include: Deschutes Soil and Water Conservation District, USDA Natural Resources Conservation Service, Deschutes River Conservancy, Central Oregon Irrigation District, Deschutes Native Seed Resources, and Deschutes County Week Management. A number of vendor tables were available at the Food Summit Conference which included Broken Top Bottle Shop, Central Oregon Landwatch, Central Oregon Seed Exchange, Central Oregon Veterans Ranch, Friends of Family Farmers, Juniper Jungle, Jusy's Jellies, Next Season Farm, OSU Small Farms Center and Community Food Systems, Plainview Farms, Redband Ranch, Rogue Farm Corps, Variegated Garden and Volcano Veggie. There were 15 sponsors and 87 members in the Directory that directly benefitted.

The economic impact of this project on the beneficiaries is increased sales and vitality of farmers, job retention, increased supply by value-added producers of local products, and increased overall education.

LESSONS LEARNED

Overall this project was a huge success. There was more participation at the workshops than expected; at the Food Summit conference we hit our target goal and audience. Based on the enthusiasm and interest, we recommend that future technical trainings be provided that build upon these workshops and continue to grow the supply and demand for specialty crops.

The impact of this project on the regional local food campaign was tremendous. The ODA SCBG ensured that the start up costs of a publication were covered and allowed for the publication to become sustainable. The percent increase of participation by specialty crop producers was over our anticipated 50% in 2013 and 25% in 2014.

The GAP/GHP portion of the grant was not successful. Feedback provided by participants of the ODA workshop said that the information presented contradicted what other farmers heard from other ODA representatives and that the follow-through seemed cumbersome and unattainable, even with a cost share. Farmers felt that it depends on the ODA representative as to what outcomes needed to be achieved for the certification.

Recipe to Market/Food Innovation Center Project

The Recipe to Market (RTM) program is designed for food business entrepreneurs who want to take their food concept to market. Topics include food safety and sanitation regulations, proper market analysis and distribution and food business planning, legality and financing.

RTM was originally offered in Central Oregon in 2012 and helped launch several food businesses. As interest in the program appeared to grow, RTM was again offered in 2014. There were several options for this program including an online webinar to introduce the program, local classes with featured business topics and an online certification program. A field trip to the Food Innovation Center in Portland was also offered on May 6, 2014.

Despite many efforts to publicize and recruit people for the RTM program and Food Innovation Center field trip, our goal was not met due to lack of participation. Three people attended the introductory webinar and visited the Food Innovation Center. In addition, a RTM follow-up meeting was held in May where these people met to learn from a past RTM graduate who has successfully launched her business. Beyond that, no one took advantage of the $1200 scholarships to enroll in the Recipe to Market certification program.

We learned from this experience that people may express an interest but may not follow through with their desire due to many reasons. Deciding to pursue a food business is a huge investment and commitment. We will continue to monitor interest so if/when people are ready to follow their dreams, they can enroll in RTM to gain the knowledge and tools necessary to be successful.

ODA-S23 Sustainable Aquaculture of Dulse as a Healthy Food for Human Consumption – ***Final report***

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PROJECT SUMMARY

Preliminary work undertaken at the Food Innovation Center (FIC) has shown that a red algae (dulse) has good potential in several food products. Work at the OSU Hatfield Marine Science Center (HMSC) demonstrated that under the right conditions dulse can be grown in sea-water tanks and correct lighting. Additional work was necessary to optimize growing conditions and select the proper strains for production and processing into value-added products. In conjunction with research with dulse at HMSC and FIC, work was undertaken at the OSU Business School to determine the best avenues for marketing dulse products. This project is a unique partnership among the Oregon Department of Agriculture (ODA) Agricultural Development and Marketing Division, two OSU branch experiment stations (COMES and FIC), and a marketing team at the OSU Business School to develop the commercialization of a red seaweed (dulse) that can be grown on the Oregon coast and other locations. It is anticipated that the results of this project will lead to demonstration of the potential for expansion of seaweed culture on the Oregon coast and introduction of dulse seaweed products into the marketplace. This project had no SCBGP funding prior to this work.

PROJECT APPROACH

The objectives of this proposal are 1) to determine the optimal lighting conditions for economic production of high-quality 'cultured' dulse for human consumption on the Oregon coast, 2) to determine the growth, morphology, nutrient composition and consumer preferences of different dulse strains, 3) evaluate new food prducts through sensory tests and consumer evaluation and 4) to develop business opportunities and marketing plan for the commercialization of dulse at the regional and national levels. The overall outcome of this project will lead to the development of an economic opportunity for seaweed aquaculture in Oregon.

GOALS AND OUTCOMES ACHIEVED

Dulse Production

Dulse was cultured at the OSU Hatfield Marine Science Center in Newport, OR in 120 L (8) and 200 L (4) experimental tanks continuously supplied with seawater at constant salinity (32-35 ppt), stocking density (6 kg/m2), and temperature (13-15 ^{o}C). Work was done under the supervision of Professor Chris Langdon and research assistant Josh Daniel. Tanks were rotated in position weekly in order to randomize position effects, such as variation in light intensity.

Two strains of dulse were examined: a strain originally isolated from San Luis Obispo, CA (SLO) and the OSU-patented C3 strain originally isolated from Puget Sound, WA.

The first experiment sought to determine the optimal frequency of fertilizing dulse with a nutrient mixture that is routinely used for growing microalgae - f/2 nutrient medium, consisting of nitrates, phosphates, trace metals and water-soluble vitamins. The goal of the experiment was to find a fertilization regimen that limited epiphytic growth while maintaining dulse growth and reducing production costs. Three treatments were examined: adding f/2 medium every 7, 14-days, or with no additions. Growth rates (percentage increase in wet weight) and quality (color and shape of fronds as well as epiphytic growth) were determined weekly. It was found that growth was not significantly different among treatments; however, cultures receiving no nutrients had the poorest quality. This data suggest that fertilizing dulse every fortnight had no negative repercussions, thereby cutting the monthly cost of nutrient additions in half.

The next objective was to determine the effect of various nutrient mixtures on the growth rate and quality of the dulse. For this, we set up two replicates of each of four treatments of fortnightly additions of the following nutrient mixtures: the standard f/2 medium, nitrates+ phosphates+trace metals (TNP), nitrates+phosphates alone (NP), and another treatment that received no additional nutrients. Eliminating the vitamins and trace minerals present in the f/2 medium would reduce fertilization costs. Over a two-month period, no significant differences were found in growth per week among treatments. However, epiphytic coverage was high in all treatments except for the nitrate and phosphate (NP) treatment. Biochemical analyses indicated that the tested nutrient additions had little effect on the biochemical composition of dulse. Sensory testing of dulse grown under the different nutrient conditions will be determined in the fall.

Full exposure to sunlight versus a covering dulse cultures with a 50% shade cloth with both SLO and C3 strains was tested. The data for this experiment suggest that shading and strain have little effect on yields. However, both shaded strains exhibited much higher quality with very few epiphytes at a stocking density of 6 kg/m2.

These tests in the production side of dulse as a human food indicated that nutrient and shading affect dulse quality (epiphytic coverage) but do not affect growth. Biochemical composition does not appear to be significantly affected by differences in nutrient compositions tested in these trials. These results indicate that costs for producing high quality dulse can be reduced by eliminating trace metals and vitamins from the f/2 nutrient mixture. In addition, production of high-quality dulse appears to be adversely affected by high light intensities at the dulse stocking densities tested in these experiments. Preliminary data suggests that dulse prefers stocking densities between 8-12 kg/m2.

Product Development and Sensory Testing

Work began in the Spring of 2015 in manufacturing dulse for human foods under the direction of Michael Morrissey, project director, Sarah Masoni, produce development specialist and research chef Jason Ball. An ideation session was held and multiple potential products were discussed. Fourteen dulse prototype products were chosen to be evaluated in a Culinology event held at the Food Innovation Center. The fourteen prototypes represented a broad range of product categories such as: savory snacks, sweets, dairy, confections, instant-meals, dressings, and beverages. Prototypes were manufactured by Jason Ball and packaged in clear plastic bags, plastic containers or small white ceramic plates depending upon size and serving temperature. A total of 17 panelists (12 Male, 5 Female; Ages 30-70) participated in the study. Panelists were recruited via email invitations and included: food scientists, aquaculture scientists, chefs, food engineers, economists, product development experts, marketing experts, small business owners, and consumer experts. This interdisciplinary approach to prototype evaluation yielded a wide range of industry expertise that facilitated an in-depth sensory analysis as well as a valuable discussion concerning the market potential and commercialization feasibility of each prototype. The chef responsible for developing the prototypes, Jason Ball, was the moderator for the event. As prototypes were presented, panelists individually evaluated the sensory qualities by using a nine point hedonic scale from 1 'dislike extremely' to 9 'like extremely'. Attributes evaluated were: "Appearance", "Taste", "Texture", "Mouthfeel", "Overall Liking", and "Amount of Dulse Seaweed in the Product". Panelists were also asked to assess the "Retail Market Potential" and "Foodservice Application Potential" using a similar nine point scale ranging from 1 'small potential' to 9 'great potential'. Additionally, panelists were asked to rate the "Scale up Feasibility" for each prototype, using a scale ranging from 1 'few issues' to 9 'many issues'. Panelists took approximately ten minutes to evaluate each prototype. Open communication was encouraged amongst panelists during the evaluation. The 'open' environment allowed for panelists to share expert insight, and communicate directly with the chef that had produced the prototypes, asking questions as needed. Valuable information was gleaned through these discussions as the informal setting seemed to make participants comfortable to share honest opinions. Additional comments were requested for issues relating to: scale up, potential target demographic, as well as any marketing or branding recommendations. The five highest ranking products were salad dressing (DRE), chips (CHP), crackers (CRK), trail mix (TRM), and brittle (BRI). These products were tested in a larger consumer study of 116 panelist and run under the standard protocol set up by Ann Colonna at the FIC. Prior to tasting, panelists were presented with a concept card for each sample. Concept cards presented nutrition data, images, health claims, and background information for each product sample. Sensory preferences were determined using hedonic scales amongst panelists who were screened to be consumers and likers of seaweed and seaweed products. Additional comments regarding individual attributes were also collected. Overall, the samples were scored favorably by the panelists. In terms of overall liking, the CRK ranked highest although there was no significant difference between CRK and DRE, while the CHP scored the lowest. Significant differences among prototypes for each attribute were also reported. Purchase intent varied, and was largely influenced by the taste and appearance of each samples as significant differences were found for the purchase intent of

each concept (prior to tasting) compared to after tasting. Furthermore, it was found that there was an inverse relationship between price and purchase intent.

Table 1 Mean values for attributes texture, aroma, flavor liking, and overall liking.

Prototypes	Texture	Aroma	Flavor liking	Overall liking
CRK	7.72±1.30a	6.53±1.30b	7.53±1.08a	7.61±1.05a
DRE	7.16±1.46ab	7.55±1.30a	7.43±1.46a	7.38±1.37a
TRM	6.16±2.30cd	7.22±1.44a	6.55±2.24b	6.49±1.98b
CHP	5.86±2.38d	6.12±1.73bc	5.41±2.35c	5.47±2.26c
BRI	6.77±2.02bc	5.84±1.62c	6.03±2.46bc	6.21±2.20b

The scale 9 point scaled ranged from (1) dislike extremely to (9) like extremely. Standard deviations and significant differences are presented ($P<0.05$). Means sharing superscripts are not significantly different.

Business Opportunities

Visits to several potential growers of dulse were undertaken by Charles Toombs, OSU College of Business, and Jerry Gardner or Terry Fasel, Oregon Department of Agriculture. These visits include the Coquille Indian tribe in Coos Bay, OR, the Whiskey Creek oyster hatchery in Netarts Bay and the Jacaobsen Salt Co. in Tillamook, Oregon. These visits focused on available of sites for growing dulse on the Oregon coast and interest in these companies for growing dulse. Charles Toombs has also incorporated the business idea of growing dulse into his OSU Marketing course on campus. This resulted in several interesting class projects for dulse business opportunities in foods, cosmetics and nutraceuticals. An Oregon company, DulsEnergy, has been formed located in Lake Oswego with Charles Toombs and Jon Gregory as the principal investors. They have brokered a business deal with New Seasons Retail markets to produce a dulse-based salad oli dressing that will be introduced into the marketplace in November, 2015.

BENEFICIARIES

Three institutions of Oregon State University came together in a transdisciplinary manner on this project. At HMSC, Chris Langdon's team were able to improve dulse culture methods to produce higher quality dulse at lower costs. This information will be useful for commercial-scale production of dulse on the Oregon coast. Findings at the FIC showed the feasibility of using dulse as a fresh product and ingredient in several different food products. There has been a tremendous amount of publicity about the dulse research and product development program in Oregon. It is estimated that over 1,000 newspaper and magazine articles have been written about the work that has been undertaken using dulse as human food. These often include statemenst about an Oregon sourced product that is sustainable and healthy for the consumer. An example of one article in USA Today is given:

http://college.usatoday.com/2015/07/16/oregon-state-university-scientists-develop-bacon-flavored-seaweed/ In this article, the concept of new businesses based on human consumption of seaweed, and the grant support from the Oregon Department of Agriculture is mentioned. A German film crew spent several days in Oregon filming the Dulse Story for the TV show "Galileo". This was shown on TV in October and is the second most watched TV program in Germany and Austria. One business will be manufacturing a dulse product (dulse salad oil dressing) and introducing it into the marketplace this fall. Students at OSU College of Business have been exposed to the use of a new natural resource for food product development and business ventures. There is no question that dulse publicity has created a certain buzz for the state of Oregon in terms of innovation and thinking outside the box. The next year will be important for companies within the state to begin dulse production operations to meet the growing demand.

LESSONS LEARNED

Overall, the project of "Sustainable Dulse Production for Human Food" went very well in a very short period of time. Funds were available for only a 6 month project and the majority of the goals were met. There was a better understanding of production parameters and the understranding of shading and aeration on the quality and color of dulse. Several prototype products were manufactured and tested by consumers at the Food Innovation Center and five were evaluated for possible commercial production. One product will be produced and commercially avaialble in local area markets in the fall of 2015. A major lesson learned was the power of news stories and tag lines in the new digital age. The tag line of "a seaweed that tastes like bacon" went viral on the internet and throughout the news world with other 1,000 news outlets (both print and digital) quickly picking up the story and running with it. This caught most of us involved with the project a bit flat-footed and and forced us to develop a cohesive response to the many request we received for the product. While 95% of the publicity was positive we did make some early mistakes in not taking control of our own response to the myriad of inquiries. This was quickly rectified and a more organized response was developed.

ATTACHMENTS