Ohio Department of Agriculture 2009 Specialty Crop Block Grant Final Report 12-25-B-0943

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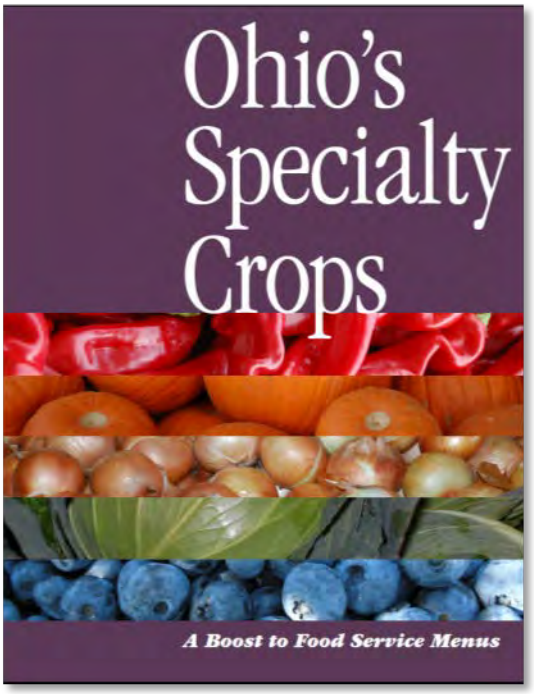
CONTENT

Project Title: Catalyzing Farm to Institutional Food Service Specialty Crop Sales in Ohio

Project Summary:

The Agroecosystems Management Program at the Ohio Agricultural Research and Development Center of The Ohio State University submitted a proposal to the Ohio Specialty Crop Promotion Program to fund a project to determine the unique needs of institutional food services to increase their use of locally produced specialty crops and to asses if this could lead to a profitable increase in the production and marketing opportunities for Ohio specialty crop farmers. The proposal also questioned if and how institutions could utilize locally-made value added products.

A survey and study conducted by Dr. Richard Stock, Director of the Business Research Group of the University of Dayton, and the development and distribution of the publication Ohio's Specialty Crops: A Boost to Food Service Menus, achieved the main goals of the proposal. With the council of an advisory group, Dr. Stock surveyed institutional food services to determine their level of interest in local product and to understand their food service needs. The survey focused on the opportunities and barriers for Ohio specialty crops in institutional food service. The publication covered these challenges and opportunities, and compiled the suggestions and recommendations of both the institutional food services and the specialty crop producers. Distribution of 2,000 publications to numerous agencies, institutions, and farmer organizations proved an effective communication tool to create and strengthen connections between Ohio specialty crop farms and institutional food services.



Project Approach:

Market Survey:

Dr. Richard Stock, Director of the Business Research Group at the University of Dayton, was contracted to do a market survey of institutional food services within the state. Executive chefs and institutional food service directors were interviewed. The goals of the interviews were to establish current levels of use of local foods, attitudes and interest in possible use, and logistics and challenges of acquiring locally grown specialty crops. The institutions were selected based on their size, the clients they served, and their possible interest in supporting local producers. Dr. Stock conducted 21 interviews by phone using a standardized list of questions. The interviews resulted in a report that identified:

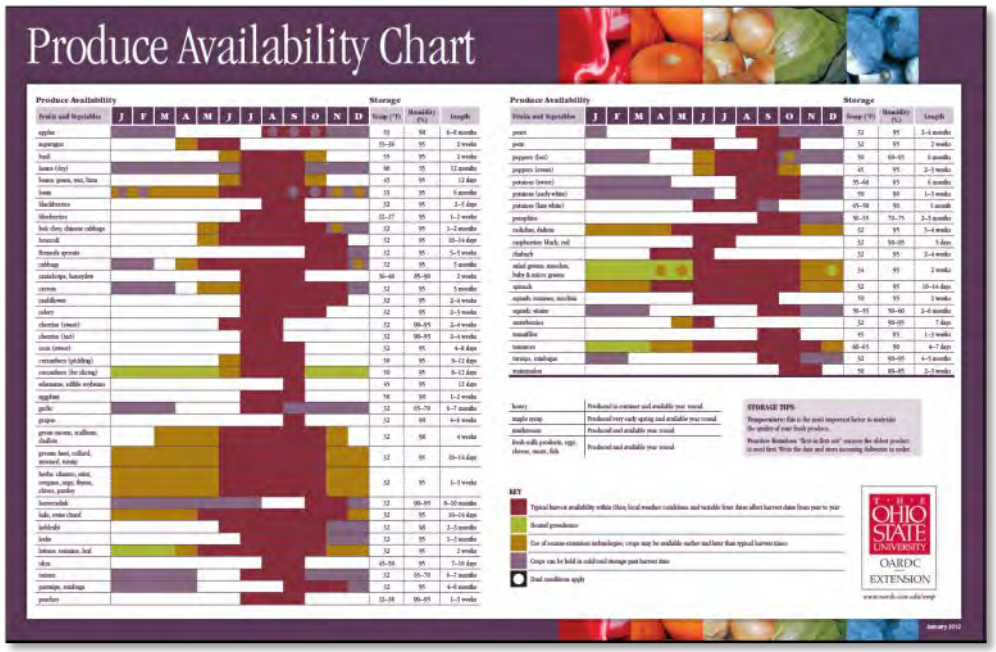
· A top ten list of specialty crops used by the institutions that could be produced in Ohio's soils and climate,

· Sources of supply for major specialty crops,
· Identification of the type of company institutions use to source their produce,
· What "local" meant to institutional food service administrators,
· The drivers for food service administrators to develop links to "local" produce suppliers and producers,
· Barriers and problems that may have emerged in their efforts to source more "local" product,
· Existing or possible development of "local" supplier systems within the supply chain.

The survey also gathered information about practical issues of consistent supply, pricing, packaging, seasonality and menu development. Dr. Stock also received feedback from the food service directors concerning the use of value added products and the possible use of "less than premium" specialty crops.

The comments received from the interviews were summarized in a 19-page report to the Agroecosystems Management Program at the Ohio Agricultural Research and Development Center of The Ohio State University (AMP).

Advisory Group:
An advisory group was assembled and coordinated by Megan Shoenfelt, AMP, to assist Dr. Stock in drafting appropriate survey questions. The participants included specialty crop producers, executive chefs from The Ohio State University and Ohio University, key distributors working with institutional food services, Ohio State Extension specialists, and community development coordinators from across the state. In addition to question development, this advisory group provided insight into the workings of the food system and gave Dr. Stock an understanding of the scope and possibilities of the project. Upon completion of the project, the advisory group helped develop recommendations based on the survey results and a plan for distributing the publication that describes the findings.



The Publication: Agroecosystems Management Program staff member, Megan Shoenfelt, developed a publication, Ohio's Specialty Crops: A Boost

to Food Service Menus, to share the results, findings, and recommendations of the project. The publication:

- Summarized the study conducted by Dr. Stock,
- Identified the key recommendations made by the food service administrators to the specialty crop producers,
- Identified key issues of importance for specialty crop producers to share with institutional food services,
- Created opportunities to make better connections between the two groups.

The publication is a resource for the food service personnel and farmers throughout Ohio currently producing specialty crops or considering production. The publication draws on and compliments valuable information provided in MarketReady, an established OSU Extension program that collaborates with Ohio organizations such as Ohio Proud, Farm Bureau, AceNet, Ohio Ecological Food and Farming Association (OEFFA), Center for Innovative Food Technology (CIFT) and Ohio Produce Growers and Marketers Association (OPGMA). To enhance reader experience, profiles and stories of local specialty crop successes are included:

- *Green Harvest Trading* – an entrepreneur provides delivery and growing advice to the non-driving Amish community

- *Ohio University Dining Services Adds New Facility to Process Local Harvest* – a grassroots movement aggregates supplies while meeting OU's sustainability policy, utilizing more local produce in campus food service.

- *DNO Produce* – a produce supplier expands to offer locally-sourced produce to existing customers.
- *Local Blueberries Now the Feature of the Berry Blast Smoothie on OSU Campus* – a local blueberry grower builds business around contacts and institutional requirements.

· *Farm-to-School Programs* – A school district reaches out to local farmers; a farmer adopts practices to accommodate food distributor.

The publication includes an updated Produce Availability Chart with seasonality, storage requirements and tips, and length of storage for over 60 types and categories of Ohio produce and farm products. The back of the chart features up-to-date food safety information.

Ohio's Specialty Crops: A Boost to Food Service Menus also includes a profile of LocalFoodSystems.org, a social networking site promoting strong local economies by providing tools for entrepreneurs connected with agriculture to network and plan together, with the goal of launching entire local supply chains that include specialty crops.

Goals & Outcomes Achieved:

Publication Distribution:

2,000 copies of the publication were printed in mid-January 2012 and distributed within two months. The distribution coincided with presentations at the OPGMA annual meeting, the OEFFA annual meeting, and several Farm-to-School and MarketReady meetings across the state. The publication was also distributed to local extension offices, Ohio Department of Agriculture, The Countryside Conservancy, produce auction houses, the Small Farm Institute, major food service distribution providers, and food service administrators at the state universities.

A permanent online version of the publication is on the Agroecosystems Management Program website: www.oardc.ohio-state.edu/amp

Study Results:

Immediate opportunities for producers were determined by a study that was completed with Executive Chefs who listed their products of interest in the food service industry. These products of interest are listed on page 21 of the report which can be found at www.oardc.ohio-state.edu/amp. The study was distributed to over 2,000 individuals and is also available on the Agroecosystems Management Program website. Enough producers received the study to ensure that immediate opportunities, such as the products of immediate interest described above, were relevant to at least 20 of them. The study did not recommend a trial project, rather it concluded that good examples were already occurring and recommended that producers work directly with distributors to meet the needs of institutional food service buyers. Since the study was published, work on more local sourcing has continued at the participating Ohio colleges and universities.

News Release:

To support and widen the distribution of the publication, news releases were prepared by the communications department at the OARDC. Write-ups of the project were reported in newsletters, websites, and periodicals throughout the state. These outlets included the OPGMA

website and newsletter, the Farm Bureau newsletter, an article in Country Folks Grower Newspaper and Grower.com.

Beneficiaries:

In addition to the Ohio Department of Agriculture, the project had support from the OPGMA, which represents hundreds of growers throughout the state, executive chefs from several of the state's largest educational institutions, and local economic development organizations. For farmers, the project and the publication provide the specific information needed to develop markets and business relationships with institutional food services throughout the state. The publication provides food service administrators and executive chefs with a go-to resource for understanding how to connect with local specialty crop producers.

Lessons Learned:

Several long held assumptions were better substantiated, others were uncovered:

- Hospitals and health care facilities utilize buying groups that may make individual purchases from local farmers difficult.
- Price, product consistency, and availability continue to drive purchasing decisions.
- At the time of the survey, the word "local" had a wide range of meaning.
- Communication and personal relationships between growers and the food service administrators is valuable in getting market connections underway and keeping them productive, beneficial, and rewarding.

Despite the challenges, success stories are accumulating in Ohio of growers and food services who find ways to work out market connections of mutual benefit to the farm, the food service institution, and ultimately to Ohio consumers. Farm to institutional sales require some effort from both the farmer and the food service personnel, but are both feasible and worthwhile for all concerned.

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Additional Information:

Online pdf copy of the publication at http://www.oardc.ohio-state.edu/amp/pageview1.asp?id=2976

Project Title: Ohio wine industry regional meetings

Project Summary:
The Ohio Wine Producers planned and conducted a series of regional meetings open to all growers and wineries in the state. Also invited were members of the tourism community, research community, media and other interested parties. The purpose of the project was:

- With an explosion of wineries [from less than 40 in 1985 to nearly 140 in 2009] it had become difficult to service the needs and interests of the disparate wineries [veteran vs. newbie, high traffic vs. very rural, big vs. small, etc] with a single conference once a year in a single city in the state. Smaller meetings, more convenient and informational relevant were necessary.
- There was also a need to provide more and appropriate professional development seminars of interest to and germane regarding the business and marketing needs of the wine and grape community.
- It was critical to keep wineries, old and new, abreast of existing regulations as well as changes in Liquor Laws at the state and federal level.
- To provide a forum for networking among the various ancillary groups, both integrally and tangentially involved in and potentially beneficial to the Ohio grape and wine business [tourism , research, etc.]
- Given the inordinate growth of the numbers of wineries in the state there was a need to create a way for new wineries, veterans, wineries in waiting, current growers and potential growers to build business as well as industry and personal relationships at a time when so many did not know one another.

Project Approach:
All wineries and growers were contacted to complete a questionnaire as to the topics of interest and a full day session of speakers; round tables and idea exchanges were planned based in the various regions of the state. In all, six meetings were scheduled and five were conducted. The sixth meeting in southeast Ohio drew only two pre-registrations and they were directed to the central Ohio meeting. Programs for each meeting were designed around each region's area of interest. All meetings included presentations by the Ohio Grape Industries Program and the Ohio Division of Liquor Control as well as the Federal Tax and Treasury Bureau. Each meeting also presented speakers with topics of interest designated by the regional attendees.

All meetings took place within the fourth quarter. Because of a lack of interest in two regions, the Appalachian regional meeting was condensed with the Capital City meeting.
November 10, 2009: in Dover for the Canal Country Region
November 3, 2010: in Cincinnati for the Nicholas Longworth [now the Ohio River Valley] Region
November 9, 2010: in Canal Winchester for the Capital City and Appalachian Regions
November 30, 2010 in Vermillion for the Lake Erie Shores and Islands Region
December 8, 2010 in Madison for the Vines and Wines Region

Attendance at the meetings varied from over 75 total participants to just under 20.

Goals & Outcomes Achieved:

Attendance at each meeting was good. The attendees at each event are attached to this report. While each meeting did not attract every ancillary category, all meetings attracted at least some outside entities interested in the wine community. Following each meeting, an exit survey was created and questions regarding professional development, speakers' topics relevance to their own businesses and as to whether or not the attendees felt the experience was worthwhile.

Our interim reports included an actual package of materials presented at each meeting. These included improving customer service, staff tasting room training for flaws, a wine and food pairing program they could take home, using social networking with an emphasis on Facebook, Twitter and Linkedin. The programs presented were selected from the list attached to this report. Also attached to this report is the survey and results of each meeting.

Especially important were the interactions with the state and federal regulators in regards to liquor law. Without exception, the information shared was deemed positive by the attendees.

However, in addition to the first round of meetings funded by this grant, the most important result was that these regional meetings set a pattern which has continued every year since. The current series of meetings have become a 'staple' in the industry service and networking opportunity. Without the seed dollars provided by the grant, the industry would have continued to rely on a single annual meeting, held in a single part of the state in which only a handful of the industry would benefit.

Beneficiaries:

The primary beneficiaries were the individual wineries who better understood regulatory requirements, understood and adapted new marketing techniques and in several cases began smaller, mutually beneficial relationships and marketing efforts.

Some anecdotal examples: the number of wineries using electronic e-mail increased dramatically, in several cases, wineries who otherwise would have participated in wine events that skirted liquor laws fully understood the need for temporary permits and other compliance issues. Several wineries adopted in-service wine tasting educational programs for their staff. At least 4 hotel properties adopted an Ohio wine touring program. Several newspaper articles were published regarding the meetings. Several multi-winery joint marketing efforts came from the relationships developed at the meetings. But the most obvious result: regional meetings in 2010, 2011 and 2012 increased in attendance.

Lessons Learned:

The primary 'positive' which came out of the meetings was the expectation on the part of the industry that the regional gatherings should and would continue into the future. Given a terrible snow storm, in subsequent years, the northeast meetings have been scheduled at an earlier time. Also, it made sense to combine the Appalachian and Capital City regional events into one since the aggregate number of wineries is smaller than in several of the other regions.

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Additional Information:
Attendee list of regional meetings
Regional meeting topics
Survey responses from regional meetings

Project Title: Field research to develop a Ribes industry in Ohio

Project Summary:
Traditional small fruit crops (blueberries, strawberries, raspberries, blackberries and table grapes) have seen widespread increase in demand from U.S. consumers due to their documented health benefits. Ribes (currants, gooseberries and jostaberries) have not had the same familiarity among Ohio consumers. Based on the increased interest in purchasing local food and eating more fruit for good health, this Specialty Crop project focused on developing Ribes as a new small fruit crop in Ohio. A team at the Ohio State University South Centers at Piketon worked closely with the Ohio Produce Growers and Marketers Association (OPGMA) and an advisory group to increase the Ribes segment of the small fruit specialty crop industry.

Project Approach:
The team conducted production and marketing research to assist growers as they explored ways to make their farm operations financially sustainable. Outreach was conducted through existing and special events.

Production Research
The project team compiled a list of currants and gooseberries to be evaluated under Ohio growing conditions. The black currant cultivars selected for this trial needed to be White Pine blister rust resistant due to existing laws in Ohio. Only certain black currant cultivars are approved to be shipped into Ohio. The Ohio Department of Agriculture has a list of acceptable cultivars of black currants for Ohio plantings. They are Consort, Coronet, Crusader, Titania, Lowes Auslese, Polar and Willoughby. Ohio has no legal restriction on white or red currants or gooseberries. A list of suitable Ribes cultivars was compiled to be planted at the OSU South Centers Research and Extension facility in Piketon

Cultivar	Type	Color	Planting Year
Consort	Currant	Black	2010
Crusader	Currant	Black	2010
Titania	Currant	Blank	2010
Primus	Currant	White	2010
Blanca	Currant	White	2011
Red Lake	Currant	Red	2010
Rovada	Currant	Red	2011
Jon Vantets	Currant	Red	2010
Captivator	Gooseberry	Pink	2010
Hinnomaki Red	Gooseberry	Red	2010
Jahns Prairie	Gooseberry	Red	2011
Invicta	Gooseberry	Pink	2010
Poorman	Gooseberry	Red	2010
Red George	Gooseberry	Dark Red	2010
Black Velvet	Gooseberry	Dark Red	2011
Pixwell	Gooseberry	Pink	2010
Tixa	Gooseberry	Red	2011
Jewel	Gooseberry	Peach	2011
Josta	Jostaberry	Black	2010

and a few collaborators' farms in Ohio. The complete production report is posted on the OSU South Centers website, http://southcenters.osu.edu/horticulture/fruits/currants-and-gooseberries/

Marketing Research & Outreach

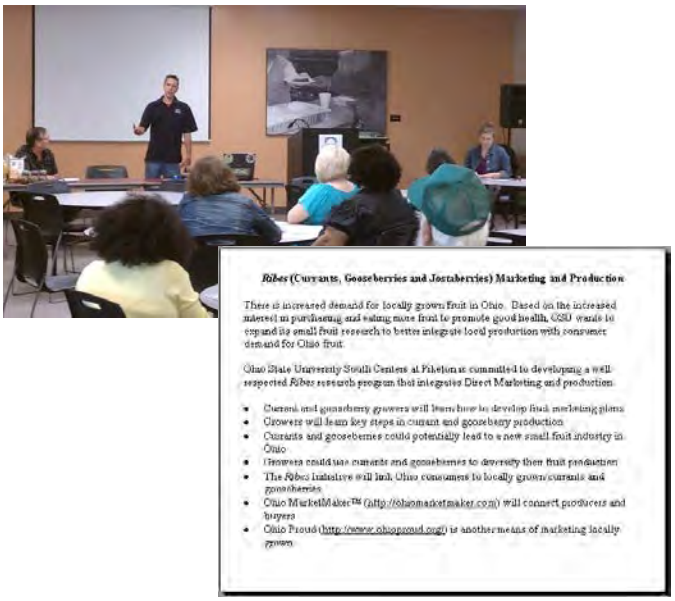
Research was conducted to investigate the activities and interest of Ohio small fruit producers, wholesale buyers and consumers. Producers and wholesale buyers were invited to participate in a brief online survey through an email request and project communications at events. Consumers were invited to participate in an online survey through articles about Ribes in the media.

The Ohio MarketMaker program and national network provided data on Ribes producers and guidance on Ribes research as it relates to other small fruit marketing. A case study was conducted and additional business observation supported the investigation.

The project team met with potential producers at Ribes workshops, the Ohio Produce Growers & Marketers Association (OPGMA) Annual Congress, Field Night at the OSU South Centers, the OPGMA Summer Tour and Farm Science Review, an annual event with more than 100,000 visitors.

Marketing outreach materials, a marketing fact sheet and an outline for a marketing plan are also included in the 24-page Marketing Report. The complete marketing report, including copies of the instruments and findings can be found at http://directmarketing.osu.edu/content/specialtycrops.htm

A banner display, postcards and other marketing materials were developed to communicate about the project and help producers introduce new products.



***Ribes* (Currants, Gooseberries and Jostaberries) Marketing and Production**

There is increased demand for locally grown fruit in Ohio. Based on the increased interest in purchasing and eating more fruit to promote good health, OSU wants to expand its small fruit research to better integrate local production with consumer demand for Ohio fruit.

Ohio State University South Centers at Piketon is committed to developing a well-respected *Ribes* research program that integrates Direct Marketing and production.

- Current and gooseberry growers will learn how to develop fruit marketing plans
- Growers will learn key steps in currant and gooseberry production
- Currants and gooseberries could potentially lead to a new small fruit industry in Ohio
- Growers could use currants and gooseberries to diversify their fruit production
- The *Ribes* Initiative will link Ohio consumers to locally grown currants and gooseberries
- Ohio MarketMaker™ (http://ohiomarketmaker.com) will connect producers and buyers
- Ohio Proud (http://www.ohioproud.org/) is another means of marketing locally grown

Goals & Outcomes Achieved:

This project increased the production and marketing knowledge base to help grow the unique Ribes segment of the specialty crop industry. The timing was especially good as interest in local, healthy and unique foods/food experiences continued to increase during the project, with direct to consumer and direct to wholesale buyers.

a. Producer Education

Small fruit producers in Ohio benefited from this proposed research and marketing program by learning how to properly grow and market currants, gooseberries and jostaberries in fresh and value-added markets. During classroom/conference presentations and field night demonstrations in 2010 and 2011, ninety producers (90) learned about planting, pruning, harvesting and other production practices for growing high quality fruit for the fresh and value-added fruit markets. Also, at the Ohio Produce Growers and Marketers Association (OPGMA) Annual Congress, existing growers were shown how to diversify their small fruit production and create a new revenue stream for their farm income. The production report and additional producer resources were made available to other educators to support their work with local growers throughout the state, http://southcenters.osu.edu/horticulture/fruits/currants-and-gooseberries .

b. Marketing

Market demand for currants, gooseberries, jostaberries and Ribes value-added products was conducted through targeted interviews, case study and survey research. Although focus group methodology was proposed, these other methods better fit for the three key groups: consumers, buyers, and producer-marketers. To assist producers with marketing a non-familiar fruit crop, marketing information was shared through fact sheets, case study, presentations (combined with production), enewslleters to the OSU South Centers horticulture listserv and new marketing support resources, such as displays, postcards and Ohio MarketMaker. Marketing resources were provided on the Direct Marketing Team's website, http://directmarketing.osu.edu/content/specialtycrops.htm .

c. Consumer Education

Consumer education also played a key role in developing a market for currants and gooseberries in Ohio. News releases resulted in stories in print and electronic publications, including Farm And Dairy. Consumers were involved in survey research, with 65 reporting on the experiences and preferences. When consumers were asked if they had tasted the following fruits, respondents reported more experience with currants than with gooseberries or jostaberries. Factors most important to consumers were taste, health benefits, convenience and pricing similar to the cost of other berries. Because

Many consumers are unfamiliar with Ribes and their uses, specialty crop producers were provided with new recipe cards to help introduce Ribes to customers. Ohio growers near immigrant populations more familiar with currants, gooseberries or jostaberries have a larger, more receptive market with consumers. Producers were also provided with a marketing report and fact sheet to help them with comprehensive consumer and wholesale marketing.

d. Project Evaluations included:

* Survey research involved 39 producers, 15 wholesale buyers and 65 consumers.
* Evaluation of Effective Extension Teaching (EEET) instruments were given to participants for their input on Extension education programs. All instructors scored higher than 4 on a scale of 1 – 5, with 5 being the high.
* Direct feedback from specialty crop growers who participated in field days and demonstrations and conference presentations- to guide investigators as they reached out to new grower audiences and developed new educational programs.
* Online analytics that showed more than 100 visitors to the production and marketing webpages.
* Ohio MarketMaker producer search to track changes in the number of producers selling Ribes.

e. Sustainability

With a base established, there are additional opportunities to continue growing this segment of the specialty crop industry, creating new opportunities for growers, retailers and food service providers who want to offer a unique food or food experience. Small fruit producers continue to contact OSU to receive support for small fruit, including currant, gooseberry and jostaberry plantings. Since Ribes are a new commercial crop for Ohio producers, producers' questions focus on variety selection, proper planting techniques, soil fertility, training and pruning plants and marketing strategies for fresh fruit.

Beneficiaries:

Beneficiaries were Ohio specialty crop producers and buyers interested in new products. Marketing outreach was delivered throughout the state through events, mail, email, media and member communications with special interest groups.

Lessons Learned:

Ribes offer new opportunities for growers and for buyers tapping into the health conscious local food market. As a specialty item, they can help marketers compete by providing unique fresh and value-added products.

The PI on the project left OSU prior to project completion. The team made a smooth transition and benefited from the fresh perspective of a new project contributor who continues to build on Ohio's specialty crop research.

Contact:

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Additional Information:

The production research plots are now established and will continue to be investigated. Marketing is being integrated into the ongoing work of the Ohio Direct Marketing Team. The

focus will remain on improving the sustainability and profitability of Ohio fruit producers by helping them address the opportunities and obstacles associated with various retail and wholesale markets.

Project Title: Good Agricultural Practices for Urban Growers

Project Summary:

The following information describes the results of the project coordinated by CIFT in which consultation was provided to urban growers around Ohio on food safety practices and implications for a safe, local food supply. Educational materials were purchased, created, and designed specifically for this audience while group and direct training was delivered in order to facilitate outreach and assistance.

Specialty crop producers have been under growing pressure from retailers, food service distributors, and consumers to increase the level of food safety of the fruit and vegetables they grow. The incidence of food borne illnesses associated with fruits and vegetables has experienced increased attention and scrutiny in recent years. Produce grown in the United States accounted for 75.3 percent of the fruit and vegetable food borne illness outbreaks, and a wide range of fruits and vegetables were involved. According to the USDA National Agricultural Library, around 15 percent of the world's food is now grown in urban areas. City and suburban agriculture takes the form of backyard, roof-top, and balcony gardening, community gardening in vacant lots and parks, and roadside urban fringe agriculture. The risk of not applying increased importance to urban growing efforts exposes all growers, rural and urban, to be impacted by an outbreak by nature of association with the infected crop.

Project Approach:

An industry accepted approach to food safety is the implementation of Good Agricultural Practices (GAP) within any outlet growing produce. CIFT provided education, direct outreach, on-site visits, and development of documentation specific to the urban grower. There are unique attributes to urban growing conditions wherein current publications are lacking. Examples range from soil amendments to nutrient handling in hydroponic operations, and sanitation practices of materials. Proper harvesting techniques, storage, and transportation elements are consistent regardless of the method of production. However, in urban circumstances, the manager may be new to any production practice and this portion became equally important. The approach was to direct outreach efforts to urban growers involved in community gardens, hydroponic growing, hoop house production, and various other applications. This was achieved through collaborations with organizations affiliated with urban growing in each of the metropolitan areas of the State.

Goals & Outcomes Achieved:

The primary goal was to educate operators on the critical nature of GAP and the ramifications to the industry overall if these practices are not adhered to in the appropriate manner. Secondly, direct consultation was provided to address specific points of caution based on the practice implemented. Finally, documentation was deemed essential due to the rotation of contacts managing these operations. Unlike a rural grower with a consistent manager each year and historical operating plan in place, urban outlets are frequently modified based on space

availability and volunteers dedicated to the mission. Materials need to be available to continue the educational components for new personnel affiliated with the location.

Activities associated with each component of the project are highlighted below to further demonstrate the outcomes achieved.

1. *An assessment of existing educational materials and their applicability to urban growers with distribution to urban audiences.* Cornell University Food Science has an extensive and exceptional array of publications recognized nationally for GAP information and resources. In recognition of this, materials were purchased that offered basic insights for specialty crop growers. These included "A Growers Guide," hand washing posters, "Reduce Microbial Contamination" brochure, a DVD in English and Spanish, and a "Food Safety Begins on the Farm" manual. These were distributed to attendees of workshops, reviewed during on-site visits, and referenced frequently in training efforts.
2. *Development and distribution of additional educational materials specifically targeted for urban growers.* As valuable as the Cornell publications are, this particular type of grower requires supplemental documents highlighting the unique characteristics affiliated with urban approaches. A summary of GAP's for urban growers was created as well as instructions associated with tear down and storage of equipment specific to hydroponic techniques. Without expressed focus on the nutrients, sanitation, and storage of potting medium, potential microbial contamination could be introduced the following growing season. These documents are included in the attachments.
3. *Approximately 10 on-site consultations with growers on GAP and food safety plans.* The premise for on-site consultations is to observe practices and provide suggestions for improvements. This approach has been successful with rural growers for the past few years as a means to prepare them for industry audits. The targeted growers in this initiative were not as quick to recognize the benefits and did not volunteer for consultations. Realizing this was critical to ensure best practices, an alternative approach was facilitated. An Outreach Technician, already interacting with these outlets in providing direction on system set up, sourcing materials, operational components, and harvesting directives added food safety to the mix and served as the educator. In doing so, more than 30 locations in Toledo were visited and observed for food safety shortcomings and presented documentation.
4. *Approximately five presentations to grower groups to ensure increased awareness.* Although the consultations were slow to generate interest by the growers, presentations positively engaged specialty crop audiences and provided information otherwise not available. Sessions were conducted in conjunction with organizations with direct interaction with key stakeholders. These locations and partners include Franklin Park Conservancy Growing to Green Program (Columbus), Cuyahoga Community College (Cleveland), Tecumseh Land Trust (Yellow Springs/Dayton), and City in a Garden Initiative (Toledo) wherein programming took place on two occasions. In total, more than 65 specialty crop growers were educated and gained insights as to appropriate techniques and handling practices. The identified partners within each metropolitan area had established relationships with people currently growing specialty crops or had the expressed desire to do so. There was also validation that the information was needed when the partner was a familiar entity versus an outside resource presenting information. For the purposes of these sessions, community garden operators, hydroponic vertical

systems, hoop houses for season extension, raised bed production, and garden soxx were all encouraged to participate.

5. *Provide access to educational content to urban growers.* All materials both purchased and created are available to urban producers. In many cases close to Toledo, publications were hand delivered during the consultations. This was particularly useful since often times the coordinator was a volunteer and turns the operation over to another candidate the following season. Having materials to reference will ensure details are shared throughout the process.
6. *Tabulation of participants in workshops, presentations, and consultations.* As mentioned above, more than 65 attendees benefited from the presentations and workshops focused on urban food safety efforts. The 30 consultations in Toledo were the bulk of the interaction but six additional on-site visits were conducted in other regions of the state. These were also focused on hoop houses and urban production outlets. Equally, any grower interested in participating in a pilot project at the local farmers market required direct training to ensure a safe product for consumers. Five such organizations received consultation in preparation for the Toledo Farmers Market.
7. *A continuation plan for distribution of information in subsequent years.* Information will continue to be available upon request. Organizations financially supporting the establishment of urban growing such as health institutions or community businesses are contacted and informed that materials exist for these outlets. Equally, the Outreach Technician intends to provide documentation at the beginning and end of each season as a reminder to those who have been trained and for reference by new contacts. All urban growers will be encouraged to review the materials and consider how Good Agricultural Practices are critical to their individual effort. This portion of training was also incorporated into a curriculum designed for overall food safety practices delivered to young adults interested in pursuing a career in food. The materials can be widely used to ensure the safety of foods consumed.

Beneficiaries:

The targeted audience, as defined by this project, is specialty crop growers generating product in an urban environment and with various production techniques. The increased interest in local food systems, coupled with identification of food deserts and limited budgets for specialty crops have accelerated the need. Ultimately, however, the beneficiaries are more broadly defined as the urban growers, consumers purchasing the products, and the specialty crop industry overall. A trickle down effect is being realized as more people are appreciating the connection to food in the way of production and consumption, thereby larger amounts of fresh, local produce is demanded. In many cases, the urban education extended past the agronomic components and microbial concerns and enabled for integration of items into diets that were previously considered a luxury or unfamiliar ingredient. How to harvest and handle product was a critical point of emphasis with GAP training but upon receipt of the crop, preparation elements ensured continued excitement and interest in consumption.

Lessons Learned:

As already mentioned, a key lesson learned aligns with regard to the grower's objectives. Specialty crop producers are directed by the markets served and, in turn, implement practices to meet the desires of the buying consumer or retailer. In the case of the urban growers, a vastly

different objective is recognized. Many of the locations were interested in fulfilling an immediate need within a specific community by providing produce for consumption the first priority and generating sales secondary. The lack of the driving force presented an issue when approaching the growers who didn't recognize the need for such emphasis. However, upon comprehensive insights as to how any product consumed is on the same platform when consideration is placed on avoidance of illness, more attention is gained. The second challenge is to recognize that specific practices need to be incorporated based on production practices. Not all methods of growing can be treated equally.

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Additional Information:

As the interaction increased with individual operations, specific documents were requested or details deemed valuable. One such example is the monitoring of water quality in urban settings and testing of potting medium from one year to the next. These and additional factors will continue to be identified and incorporated into the existing materials to ensure a comprehensive approach to urban production.

Attachments:

1. Promotional fliers for the training sessions conducted
2. Guidelines for tear down and storage of materials
3. GAP for urban growers to compliment the purchased documents

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Project Title: Applied research to support GAP standards

Project Summary:

Fresh fruits and vegetable are an important part of the diet. At the same time, foodborne disease outbreaks linked to vegetables are increasingly reported in the US and around the world. Since many of these commodities are eaten raw or minimally processed, it is imperative that they do not become contaminated with food borne pathogens during the stages of growth, harvest and processing. Moreover, producers who employ effective intervention strategies to mitigate food safety risk may place themselves in a competitive market advantage.
The purpose of this project was to explore several proposed food safety mitigation strategies to prevent food borne pathogen contamination of Ohio grown produce and provide scientific data for specific production metrics suggested by retailers and outside commodity groups.

Project Approach:

In this project, three specific objectives were proposed: to 1) Assess the level of food safety risk, if any, posed by the use of draft horses in vegetable production; 2) Evaluate *practical* and effective produce washing products and procedures for Ohio farmers and; 3) Determine baseline microbiological quality measures for water used in irrigation of vegetable crops in Ohio. These objectives were met through a combination of field studies and carefully conducted laboratory experiments.

Goals & Outcomes Achieved:

Objective 1: Manure from draft animals deposited in fields during vegetable and fruit production may serve as a potential source of pre-harvest pathogen contamination of foods. To better quantify this risk, we determined the prevalence of Escherichia coli O157:H7 in horses. Between June and September 2009, freshly voided fecal samples were collected from horses stabled on 242 separate premises in Ohio, USA. Overall, the prevalence of E. coli O157:H7 was 1 of 242 (0.4% prevalence, 95% confidence interval [CI]=0.01 to 2.28). E. coli O157:H7 was recovered from none of the 107 equine fecal samples (0% prevalence, 95% CI~ 0.00 to 3.39) that originated from locations without ruminant presence, and only 1 of the 135 horse fecal samples (0.7%prevalence, 95% CI=0.02 to 4.06) from sites where ruminants were also present. The lone positive sample was collected from a horse that was co-stabled with a goat. Subsequent sampling at that location identified indistinguishable subtypes of E. coliO157:H7 present in the cohoused goat, in the environment, insects, sheep, and other goats housed in an adjacent field. E. coliO157:H7 was not isolated from the five subsequent samples from this horse. These data indicate that E. coli O157:H7 carriage by horses is an uncommon event.

Objective 2: A variety of chemical additives are added to post-harvest wash water in attempts to decreases the microbial load on produce and reduce cross contamination. Washed and unwashed produce (tomatoes, green peppers, and cucumbers) was collected from small-scale vegetable producers in northeastern Ohio. Coliforms present on produce washed with one of five different chemical additives commonly used in the region (household bleach, Sanidate®, Vex®, dish soap, and water) was compared to coliform load on unwashed product from the same farm. Trends were similar on all produce types. Produce washed in water or water with bleach had similar coliform counts as unwashed produce ($P>0.05$). Produce washed with Vex had, on average a ten-fold higher count of coliforms ($P<0.05$). Only produce washed with Sanidate or dish soap had significantly lower counts of coliform. However, since dish soap is not approved for application to edible produce, Sanidate was the only product among the chemicals tested that proved to be both efficacious and safe. The reasons for the lack of effectiveness (and increasing contamination effects of Vex) were not explored. Under the conditions tested, a lower microbial load, and possible a longer shelf-life and safer product may be achieved by not washing produce at all prior to sale or shipment.

Objective 3: Guidelines for microbial irrigation water quality have been proposed by regulatory agencies and organizations to reduce potential risks of waterborne contamination of produce. Most recommendations emphasize threshold values of fecal indicators and typically rely on only a limited number of water tests over the course of irrigation season. In this study, two irrigation canals and four surface reservoirs located in Ohio, USA were repeatedly sampled (n=227) to investigate fluctuations of fecal indicators concentration over an irrigation season (2010).

Bootstrap analysis was applied to determine the sensitivity of the measured parameters as a function of sampling frequency. E. coli counts in water collected from irrigation canals were approximately one order of magnitude higher (2.48 ± 0.79 log MPN per 100ml) than that in reservoirs (1.54± 0.04 log MPN per 100ml) and increased following heavy rainfall events (>20mm) ($P<0.01$). Sampling frequency was estimated in terms of accuracy and precision. The 95% bootstrap confidence interval width surrounding coliform and E. coli estimates based on a single sample were broad, including or exceeding the upper limit for acceptable use standards recommended by several organizations (126 CFU/100ml). In conclusion, a single water sample imprecisely reflected the quality of water over the course of the irrigation period. Caution should be used when drawing conclusions about the microbial acceptability of water used for irrigation purposes based on a limited number of water quality measurements. Environmental factors influencing the spatiotemporal variation in the water quality (i.e. the type of water source and recent heavy precipitation events) and the expected interval between testing and the time of harvest should be considered in developing irrigation water testing frequency guidelines.

Outreach and consultation to our stakeholder partners assisted us with developing fact sheets to their constituents. Locations and numbers of attendees at the meetings and presentations are listed below.

Date	**Location**	**Attendance**
April 20, 2009	Wooster	28
April 6, 2010	Springfield	12
May 10, 2010	Geauga	19
June 5, 2010	Savannah	21
June 9, 2010	Bainbridge	42
January 2011	OPGMA	57
March 21 2011	Putnam County Ext.	14
April 4, 2011	Montgomery County	27
April 7, 2011	Pike Co	12
April 18, 2011	Morgan Co	24
June 4, 2011	ABE center, BG	11
January 2012	OPGMA	58
Feb 20, 2012	Homerville Auction	109
March 20, 2012	Montgomery Co	5
March 30, 2012	Geauga Co	79
April 11, 2012	Piketon	36
April 12, 2012	Morgan Co, with rural action, amish	28
April 14, 2012	Mahoning Co	38
April 17, 2012	Knox County	2
April 27, 2012	OARDC	14
April 27, 2012	OARDC Giant Eagle	27

Other Materials

2010-2012: Risk Assessment and Resource Workbook published. Bulletin 947, being sold as PDF download (only) online for $5—recovery cost for comm tech. No profit.
2012: Flooding and Produce Safety Factsheet – ANR 27-12

2011: We have 5 posters in a series for general consumption and presentation to amish groups. 1) "Should you care about produce safety", 2) "For Farmers: Train workers to improve produce safety", 3) "Routes of Contamination of Fruits and Vegetable on the Farm", 4) "Clean and Sanitize to prevent the spread of pathogens", 5) "Vegetable Food Safety" (last 2 prepared in conjunction with Family Nutrition dept)

2012: Developing new poster display for things like Farm Sci Review (trifold display case)

2011-2012 (not published): Have an Amish "PowerPoint" that we print out as a booklet so they get the same information from the "general population ppt" but with bigger slides, more images, and relevant to amish (always editing still but more amish friendly)

2010-2012 (debuted 2011) 3 hour PowerPoint presentation on GAPS

Studies were conducted for this project. Two of the three studies were published in peer-reviewed scientific journals which are identified below.

Won, G., Kline, T.R., and LeJeune, J.T. (2013) Spatial-temporal variations of microbial water quality in surface reservoirs and canals used for irrigation. *Agricultural Water Management* 116, 73-78. Link at: http://dx.doi.org/10.1016/j.agwat.2012.10.007

Lengacher, B., Kline, T.R., Harpster, L., Williams, M.L., and Lejeune, J.T. (2010) Low prevalence of Escherichia coli O157:H7 in horses in Ohio, USA. Journal of Food Protection 73, 2089-2092. Link at: http://www.ingentaconnect.com/content/iafp/jfp/2010/00000073/00000011/art00019?token=003c118737b76504c48663b7045492b6c7b7a632d386a333f25767ac5040

Beneficiaries:

This information can be used by the vegetable producers of Ohio and in other regions to guide their pre- and post-harvest management decisions. The data was also submitted to the US Food and Drug Administration for consideration in their policy making process on the Proposed Produce Safety Rule. Results of two of the three studies were published in peer-reviewed scientific journals so it can be accessed by other farmers, scientists and policy-makers worldwide.

Lessons Learned:

Despite the fear about food safety threats on the farm, Ohio farmers were proactive (they asked for this research to be completed) very willing to participate in the study. This co-operation facilitated the successful completion of the aims.

Contact:

Jeffrey T. LeJeune, DVM, PhD, 330-263-3739, lejeune.3@osu.edu

Additional Information:

1. Won G; Kline T; LeJeune JT. (2012) "Spatial-temporal variations of microbial water quality in surface reservoirs and canals used for irrigation." Agricultural Water Management. (In Press). (Objective 3)
2. Lengacher B, Klne t, Harpster L, Williams M, and LeJeune J. (2010) Low prevalence of *Escherichia coli* O157:H7 in horses, Ohio, USA. J Food Prot 73:2089-2092. (Objective 1).

Project Title: Integrating Specialty Crop Produce into Ohio Schools

Project Summary:

Farm to school programs attempt to shape students' dietary habits in a positive way by providing education on food systems, including specialty crop production, in schools, and increasing student consumption of locally produced specialty crops in school meals. The original proposal for this project was awarded to The Ohio Department of Agriculture (ODA) who partnered with the Ohio Department of Education (ODE). The ODE and the ODA partnered to develop "pilot programs" in ten schools in Ohio. Each pilot program was structured differently, according to the needs and capacities of the involved school districts.

Leadership of the statewide Farm to School program was transferred to Ohio State University (OSU) Extension in October, 2011. OSU Extension worked with the pilot programs to evaluate and market their success. OSU formed a diverse Advisory Group that included specialty crop growers, distributors, school food service buyers and students, as well as representatives from ODE, ODA, the Ohio Department of Health and the Ohio Produce Growers & Marketers Association.

Project Approach:

Through a competitive grant process, ten schools throughout Ohio were selected to pilot Ohio Department of Agriculture's Farm to School Initiative from 2009-2011. A total of $20,000 was disbursed among the school districts. Each district was granted $500 to $2,000 to implement the following projects:

Pilot School District	County	Project
Carrollton Exempted Village School District	Carroll	• Purchased a salad bar for high school to feature Ohio produce. • Food service staff worked with local produce distributor to source Ohio grown specialty crops. • Students developed media and promotions around local farmers and farm products to coincide with food served. • Principal allotted extra funds for procurement; Superintendent allotted extra funds to staff the salad bar. • Students assisted with harvesting, transporting and preparing produce.
Garaway Local School District	Tuscarawas	• Developed a school garden with 4th, 5th and 6th graders. • Garden linked to science classes, yearbook and journalism classes and community service groups.
Marietta City Schools	Washington	• Elementary school classrooms grew basil for the cafeteria. • First and second grade students visited a local strawberry farm. The berries picked were served throughout the district. Strawberry posters primary school students made were hung in elementary and high school buildings. • AVI Food Service contributed an additional $5,000, the district has called for project proposals from teachers and staff, a board reviewed applications and distributed funds.
River View	Coshocton	• Food service director partnered with FFA and Vo-Ag class –

Local School District		FFA students raised tomatoes to sell to the cafeteria during the summer months. In fall and winter the school utilized and updated the school greenhouse to grow salad greens and herbs for the cafeteria. • Established relationships with five local farmers and purchased fresh fruits and vegetables for the fall cafeteria menu.
Pymatuning Valley School District	Ashtabula	• In an effort to increase locally grown produce offered in cafeterias, this project 1). Identified local producers, 2). Offered at least three food items from local producers per lunch and 3). Increased student and community knowledge of the benefits of purchasing local foods. A survey of local producers was administered to identify the type and amount of local specialty crops available. A taste testing event was held in partnership with the "Meet the Teachers Night" in order to increase participation and support of Farm to School efforts and engage the entire family. Invited speakers discussed nutrition and agriculture during the taste-testing event. Data was collected from producers and event participants using program evaluation methods.
South Euclid Lyndhurst School District	Cuyahoga	• Building on Farm to School efforts in the school district, an additional program called "Farm to Family Night" was initiated. The program included "Farm to Family" events district-wide, including six schools. "Farm to Family" events featured specialty crop: taste testing, cooking demonstrations, educational presentations. Program evaluation occurred at each event. Based on parent and student responses, new menu items featuring Ohio crops were implemented in school lunch menus district-wide. Recipes were also made available.
Switzerland of Ohio Schools	Monroe, Noble and Belmont	• Food service director purchased fresh produce from Amish auction house for summer feeding program and school lunch and breakfast program through the year. • District sponsored an Ag Day for 500 5th graders, information on specialty crops will be featured. • District promoted activities and initiative at the County Fair with a poster and promotional materials. • Built on existing school garden program, linking into cafeteria.
Wellington Schools	Lorain	• Wellington Chapter of Future Farmers of America (FFA) provided educational instructions on the growth and maintenance of specialty crops to grades 4 through 6 at Wellington Middle School. FFA members and middle school

		students selected and planted specialty crop items that were incorporated into school lunch menus. The produce was also be used during a taste testing and cooking demonstration event for the entire middle school. The vegetables were produced in the Wellington FFA chapter's hoop house. Educational material about accessing fresh, nutritious foods was disseminated to students and parents. Tours of the project were offered during parent night and other school events.
West Elementary School	Athens	• This project aimed to serve fresh, local vegetables in an already-established salad bar in the cafeteria to K-6 student body. Grades 2 and 4 will attend farm tours at farms supplying the salad bar. Farm visits were incorporated into classroom curriculum that meets state standards. 6th grade participated in a food practicum to cultivate tomatoes that were served in the school's salad bar.
York Elementary School	Tuscarawas	• There were three main components to this project: 1). Educate students about the importance of agriculture, 2). Promote healthy, local foods, 3). Provide hands-on opportunities to students to encourage entrepreneurship. These goals were accomplished through a series of programs including: 1). "Tasty Tuesday" stand, which served local produce in the school cafeteria, 2). Mr. Green Jeans, monthly visits for K-2 to various agricultural production sites, 3). 5th grade AgVentures program, a magazine and Distance Learning program about agriculture, and 4). Pumpkin project, grades K – 5 collectively grew pumpkins in conjunction with a local farmer. The older students assisted the younger students in accomplishing tasks, such as sowing seeds. Science curriculum, such as soil pH testing and soil nutrient assessment, was incorporated into grades 3-5 involvement. Proceeds from the Pumpkin project will fund future Farm to School efforts.

Goals & Outcomes Achieved:

The goals for this Specialty Crop project shifted a bit, based on input from the new Farm to School Advisory Group and the change of project administrator. Rather than direct parent education, regional education and pre-defined procurement programs, the staff focused on education that reached the following key stakeholders:

- Statewide conference with 300 attendees from schools, farms and support organizations
- Presentations for more than 600 dining service personnel with the Ohio Department of Education
- Displays and webinars with the Ohio Produce Growers and Marketers Association, reaching more than 100 specialty crop producers
- New website with more than 1,000 visitors
- Farm to School Guidebook provided in print and electronic forms to 500 specialty crop producers, schools and those who support them
- Integrating school food procurement into existing marketing programs, such as MarketReady, that prepares producers to enter new markets and MarketMaker that connects producers and buyers

1. Assessed and documented opportunities and obstacles for procurement of Ohio specialty crops to schools.
   - A 2009 survey, conducted by the Urban Affairs Center at the University of Toledo, found that 37.5% of school food service directors currently purchase from Ohio farmers. Ninety-three percent of school food service directors surveyed agreed that they would purchase local foods if more accessible.
   - In a 2012 survey sent to all 1,300 Ohio school food service directors by the Ohio Department of Health, 87% of respondents who currently have a salad bar indicated that having a salad bar encourages students to consume fruits and vegetables. Of the schools that currently had salad bars, 92% have a positive or very positive perception of them and 54% of the schools that have salad bars purchase local foods.

2. Consulted and presented to non-pilot schools, specialty crop farm groups, distributors and programs, and State agency partners interested in implementing farm-to-school activities, including:
   - State Agency Presentations: ODH, ODE, Jobs and Family Services
   - Fresh Fruit and Vegetable Snack Program
   - School Nutritionists and Dieticians Association, state and regional
   - Ohio Produce Growers & Marketers Association
   - COSI Science Center, Farm Days
   - Co-hosted a statewide Farm to School conference for 300 participants in Cleveland, Ohio.

3. An Ohio Farm to School Program was established at Ohio State University Extension. Activities included:
    - Formed a 40+ member statewide advisory board, including stakeholders representing state agencies, non-profit organizations, school districts, and industry.
    - Developed a network of OSU Extension professionals working on Farm to School projects. For example, one Extension educator worked with a group of local partners to host an educational "school to farm" tour to introduce school food administrators to growers in their area.

    - Provided technical assistance to the pilot school districts.
    - Integrated Farm to School into the "MarketReady" curriculum for specialty crop producers to learn how to sell to new markets, including schools (prior curriculum was focused on selling to grocery stores and restaurants).
    - Worked with the Ohio Produce Growers & Marketers Association to include a display at their 2012 Congress with more than 700 participants.
    - Collaborated on a March, 2012 webinar for specialty crop producers to learn how to sell to schools.
    - Researched policy and legislation appropriate for Farm-to-School efforts in Ohio.
    - Worked with the national "MarketMaker" program to develop a 'widget' specifically for Farm to School, which can assist school food directors in finding local specialty crop producers.

    - Completed and disseminated various electronic and print publications, including a "how to" guidebook for schools and specialty crop producers, a website and a poster that was customized for pilot schools and others involved in the project.
    - Represented Ohio in the National Farm to School Network, the Ohio Action for Healthy Kids Steering Committee, School Food Focus event and the National Farm to Cafeteria conference.
    - Delivered presentations to various groups, including:
        - Ohio Department of Education Fruit & Vegetable Snack Program
        - Ohio Department of Education Fall Management Conference
        - Ohio Buckeye Healthy Schools Alliance
        - Ohio Action for Healthy Kids

Beneficiaries:

The direct beneficiaries were school children, specialty crop producers, teachers and parents from the participating pilot school projects.

Indirect beneficiaries were all of the Ohio school personnel, specialty crop producers and community leaders who learned about integrating specialty crop produce into Ohio schools through presentations, media reports, displays, special events, publications and the website.

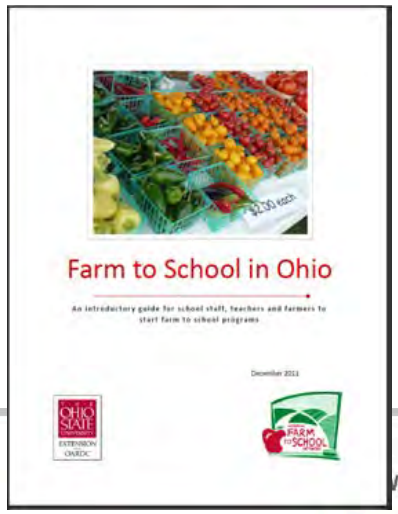
Lessons Learned:

Throughout this grant cycle, feedback was gathered from each of the pilot programs, to determine the resources, programming, and support that schools need to start Farm to School Programs. Many schools in Ohio are interested in starting Farm to School Programs, but do not know where to begin.

Integrating Specialty Crop Produce into Ohio Schools served over 14,000 students in 10 schools throughout the state of Ohio. All of the pilot school respondents indicated that they would like to continue to include Ohio Specialty Crops in their lunch programs. However, 50% of the pilot programs responded that they did *not* have enough cold storage/storage space to accommodate an increased use of fresh fruits or vegetables.

Additionally, it was identified that schools needed help with the following:

- Finding local farmers willing to sell to schools
- Timing and frequency of product deliveries
- School-tested recipes and menus that incorporate local foods
- Vendor information that indicates on order sheet or in catalog where foods come from
- On-going, additional financial support
- Cost comparison of local and non-local menus options
- Information on the seasonal availability of Ohio-grown fruits and vegetables
- Training sessions on preparing whole fruits and vegetables
- Obtaining competitive prices for local foods
- Food safety education on the use of local foods
- Marketing and promotional tools to support farm to school efforts
- Extra time preparing and handling fresh produce



Based on their feedback, a website and an Ohio Farm to School Guidebook were created for specialty crop producers, school personnel and others who support Farm to School.

http://farmtoschool.osu.edu

Contact:
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Additional Information:
The Ohio State University (OSU) Extension continues to work with an AmeriCorp VISTA member and the Ohio Produce Growers and Marketers Association (OPGMA) to integrate specialty crop produce into Ohio schools. Thanks to the foundation developed during this project, OSU and OPGMA work with the statewide Advisory Group on research, education and advocacy to help specialty crop producers and schools with the new meal requirements. Additional state collaborators have added Farm to School resources, such as F2S grants for schools from the Ohio Department of Education and a Salad Bar Toolkit from the Ohio Department of Health. The Ohio Farm to School program is now linked with the national Farm to School network and the USDA FNS Farm to School program.

2009 SCBG FINAL REPORTS
(Approved 11/29/11)

Project Title: Knowing Our Communities

Project Summary:
The purpose of this study was to identify specific foods that can serve local ethnic communities (Latino, Russian, and Somali) as a means to understand cultural differences in diet and identify specialty food crops that are currently unavailable to these populations. Unfortunately, traditional foods that are part of a culture in one country may not be available in a new environment. Instead, people are faced with strange foods and lack of cultural knowledge as to what provides the healthiest diet. Through ethnographic research we hoped to discover what foods are missing from a traditional diet of Hispanic, Russian, and Somali populations in Columbus, Ohio and what changes people have made in their diet based on new foods that are available to them. The ability to provide traditional and foods could contribute to increased health (through preparation of familiar foods) and an easier transition into a new community.

Project Approach:
The project's ethnographers studied three ethnic populations (Latino, Russian, and Somali) through the process of ethnographic interviews for the purpose of identifying specialty crops that are currently unavailable to these populations. These represent the largest ethnic groups in Columbus. Data was collected following Rapid Assessment Protocols that focus on interviews and the collection of oral narratives. Interviews were semi- structured – though a set of fixed questions were used (see Appendix E for list), the interview took an open-ended form where the participant contributed much of their information through stories with little prompting from

interviewer. The semi-structured interview has the benefit of preventing the ethnographer's personal bias from interfering too much with the questioning; however, a fixed set of questions also guarantees that similar data was collected from each participant to allow for cross-cultural evaluation.

Fifteen participants were interviewed from each ethnic group, with a total of 45 interviews. Participants were labeled by ethnicity and then by number. Locations for interviews varied according to ethnicity; all interview locations are listed in Appendix A. Before each interview, a statement of participation was read and the purpose of the study explained, including how the information collected would be used. Through this procedure every interviewee was aware that the final report would be anonymous and their name would not be used in any publications. Despite this, many people were reluctant to give their name to me at all, or only provided their first name.

Goals & Outcomes Achieved:

The collaborative grant for the student farm was not funded; therefore, a list was not created. In addition there was no one to give the list to.

The purpose of this study was to understand the cultural differences in diet and food choices that are present in Somali, Russian, and Hispanic groups in Columbus, Ohio.

The analysis of common themes and unique perceptions showed an interesting blend of globalized culture with differing ethnic needs. It is important to understand each culture's different perception when discussing issues of food. For example, questions that were easily answered by some ethnic groups (such as, "Is your diet healthy?") were trouble for other groups because they did not understand the underlying concept of health and diet.

This interview process used the same question set for each ethnic group to allow for cross-cultural comparisons; however when dealing with each group individually it is important to keep these distinctions in mind. The common themes revealed that there are some similarities between the cultural patterns of each group, such as what their children eat and who cooks at home. This shows that even if the diet differs between the three ethnic groups, there are still similarities in the way their cultures handle meals and preparation.

In addition to assessing how well each group accessed traditional foods, participants supplied information on new foods that were acquired and shopping locations for each ethnicity. All three ethnic groups agreed that spices were the hardest to find in Columbus. However many of the participants could not remember specific names of spices, which makes it difficult to supply this resource.

None of the participants interviewed had trouble finding particular holiday foods – it is possible that holiday foods are specifically imported for religious significance or that traditions have changed since moving to Ohio and new foods are associated with holidays.

Also, none of the participants had ever used Mid-Ohio Foodbank, and many were unaware of its existence. More people in these ethnic groups could benefit from such an organization if they were educated on its location and services.

Participants from the Somali and Hispanic groups expressed more difficulty in finding fresh fruits and vegetables than the Russian participants; possibly this is due to differing climates in their home countries that shaped their perceptions of "fresh" or introduced more tropical fruits.

Finally, the Somali population had a harder time understanding the concept of a farmer's market than either the Hispanic or Russian populations. The biggest problem with shopping at a farmer's market is both poor advertising to ethnic populations and misconceptions about what a farmer's market is. Even participants who understood the concept thought that these markets were far away and out of their price range, when other interviews revealed close-by markets. If farmer's markets were aware of ethnic needs and advertised specifically for their convenience and price, ethnic populations would probably be more likely to shop there. Somali populations might be tougher to attract; the analysis of ethnic vs. chain stores showed that Somali participants were much more likely to shop solely at ethnic stores than either Hispanic or Russian communities.

When asked about traditional foods, there was a divide between the different ethnic groups. Almost 50% of Hispanics questioned said they had trouble finding traditional foods. However, only 20% of Somalis and 1 Russian had trouble with this. The three Somalis, though interviewed separately, all agreed the toughest food to find in Ohio was "good milk." They claimed the milk here was not fresh enough and had too many preservatives. Hispanics ranged in their difficulties, though "good" jalapeños and corn tortillas were both mentioned more than once. It seems that both Hispanic and Somali complaints stem from food preparation techniques rather than the presence of a particular food. Though milk, jalapeños, and corn tortillas are all present in Ohio grocery stores, these foods are not always prepared in the traditional way.

When it came to spices, all three ethnicities had trouble finding certain spices. Unfortunately, another correlating trend is that many participants also had trouble remembering the names of the spices they missed. Often, interviewees explained that this was because they were young when they moved and they remembered a parent cooking with this spice or it was a locally grown spice that they had not bought in a store and therefore did not know the specific name. This was truer for the Somalis and Russians; the Hispanics usually knew the names of the spices they missed. This made it difficult to assess what sorts of spices they would look for in a farmer's market as no name was available and comparisons often became confusing to both the participant and the interviewer.

The participants were also asked if there were any fruits or vegetables they had trouble finding in Ohio. Both the Hispanic and Somali groups had trouble finding particular fruits; 60% of Hispanics and 47% of Somalis reported there were certain fruits or vegetables missing in Ohio. Of these people, 4 of the Hispanic and 2 of the Somali participants reported specifically that mangos were difficult to find. Two Hispanic respondents referred to plantains as difficult to find while 5 Somali participants simply missed the presence of "fresh fruit." The Russian participants, however, were far more satisfied; only 1 Russian participant felt there was a fruit or vegetable tough to find in Ohio, and that was actually a specific fruit preparation (the interviewee

felt that jarred tomatoes were difficult to find). The other 14 Russian participants were not missing any of their produce. One possible explanation is that Russia lacks the tropical climates of both Mexico and Somalia and therefore Russians do not miss fruits such as mangos, which are difficult to grow in an Ohio climate.

The final major theme from the interviews concerns farmer's markets. The interesting split between ethnicities is that considerably more Somalis had trouble understanding the concept of a farmer's market while both Russians and Hispanics understood what the question was asking. Over 50% of the Somalis interviewed did not understand what a farmer's market was; when described as an "outdoor" market they interpreted "outdoor" to mean "outside" market, as in a store outside of their ethnicity. The answers they subsequently gave (such as Wal-Mart or Giant Eagle) showed a continued lack of understanding. However, only one Hispanic participant and one Russian participant had trouble understanding the concept of a farmer's market. Both ethnicities showed that ~60% Hispanic and Russian participants did not shop at a farmer's market while ~40% would shop there occasionally. Of the 7 Somali participants who understood what a farmer's market was, none of them reported shopping at one.

Some of the reasons listed were convenience (there were none near their house) or cost. However part of the problem is simply advertising – participants were either not aware of any farmer's markets though others who lived in a similar area reported one nearby. Many also had preconceived notions that farmer's markets would be considerably more expensive than a grocery store and had no idea that some foods are actually cheaper at farmer's markets.

Beneficiaries:

This study identified a rapidly expanding audience that at present is over 100K people who by their short tenure in this country do not have regular access to fresh produce that resonates with the foods they are used to preparing. That is a substantial clientele for local farmers.

The data collected from this grant informed the central Ohio organizations that interact with the three ethnic communities on how they perceive access to produce. This is fundamentally important to the immigrant communities as a whole. For example marketing "outside markets" to a community that translates the title as "foreign foods" inadvertently creates constraints or roadblocks to access to fresh produce. This information is also important to farmers in understanding where to market the produce in order to get it to the audience. Should a student farm use the data the report provides valuable information for planning crops and marketing the produce to the community.

Beneficiaries of this study include the three ethnic populations studied (Latino, Russian, Somali) as well as the Columbus community, specifically those who work with said populations (service organizations, after-school programs, etc.) as well as retailers who are interested in meeting the needs of this growing consumer base.

Lessons Learned:

The most productive method for locating participants was through a "middle-man," someone who was familiar with the study and could introduce the interviewer to others. This had the

benefit of establishing trust between the interviewer and informant, the primary goal of every ethnographer. This was especially useful for interviewing the Hispanic population.

One of the most difficult aspects of this study was identifying locations to meet potential participants. A list of churches and community centers was utilized for each ethnicity. There were fewer options for the Russian group, so all interviews took place at the store attached to the community center. This allowed the store owner to become familiar with the interviewer, which in turn led to more participants through his help. It was easier to find locations for talking to Hispanics, as there are many more community centers and organizations. The Ohio Hispanic Coalition was especially helpful for finding participants- they allowed the interviewer access to people they were working with in addition to supplying introductions to other Hispanic organizations. Many of the interview sites were found through them. The Somali group was the hardest for finding good interview sites. Though they had more community centers than the Russians, many of them were difficult to contact. The best source found for Somali participants was a mostly-Somali mall where almost all of the stores were run by Somalis and the primary shoppers were Somali. Within that mall, the interviewer was able to find a diverse group of Somalis by meeting different shop owners, who would introduce her to people willing to speak with her.

One problem with the interviews was that people were not always willing to wait through the entire interview, despite the explanation of the time required and their original consent.

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Additional Information:
A detailed report of this project, written by Ohio State Anthropology graduate student and project interviewer Lauren Winkler, has been e-mailed along with this document. It includes methodology, supporting materials, detailed breakdowns of interview locations, footnotes, and more.

Project Title: Exploring Pumpkin Seed as a Locally Produced, Processed, and Marketed Snack Food

Project Summary:
This project seeks to capitalize on the experience and innovation growers have developed over decades of producing pumpkins, with an eye toward market expansion and diversification. The project leadership was shared between a group of researchers at Ohio State University (OSU) and members of the Innovative Farmers of Ohio (IFO) association. Our common objective was to create a value added locally produced pumpkin seed snack food product. Pumpkin seeds are nutrient dense foods, packing high amounts of magnesium, manganese, phosphorus, iron, copper, zinc, and protein, as well as omega-3 and 6 fatty acids.

This collaboration officially began in the fall of 2009, when the Ohio Department of Agriculture awarded a Specialty Crop block grant to the IFO and OSU partnership. It was IFO's responsibility to recruit two growers for the project who would plant a small production test plot and handle the fiduciary aspects of the contract. It was left to specialists in various OSU departments, Extension, Food Science and Technology, Horticulture and Crop Science, and Agriculture Environmental and Developmental Economics, to supply the technical expertise and field direction.

The project was divided into three phases; production, processing, and marketing / evaluation. Phase one involved selecting the pumpkin hybrids and validating the pest management practices currently used for Jack-O-Lantern's would suffice for seed production. In 2009, OSU researchers trialed 14 pumpkin and squash hybrids to see which ones had the potential to produce seeds best suited for snack food, such as yield and taste. From that trial, four hybrids were selected, Mystic Plus, Small Sugar, Pik-a-pie, and Snackjack (figure 1). We later added a fifth hybrid from New Zealand that produced a large hull-less seed, similar to the hull-less seed produced by Snackjack.

In 2010, production trials of these five hybrids were set up at the Western Agriculture Research Station (WARS) in South Charleston, and at grower locations in Sandusky and Delaware counties. The fruit from these three trials were harvested and used to estimate the productivity of each hybrid.

Figure 1. Pumpkin and squash varieties used in trial, from left to right, Mystic Plus, Small sugar, Pik-a-Pie, Snackjack, and NZ hybrid.

Phase two encompassed the fruit and seed processing steps. Pumpkin fruit representing all five varieties from WARS and Sandusky county site were transported to the OSU Food Industry Center Pilot Plant for exterior washing followed by seed extraction, cleaning, roasting, and seasoning. All five raw seeds are shown in figure 2. During this phase we were able to calculate the amount of raw wet seed produced by each hybrid per acre, and also determine the final dry weight after processing. The final roasted and seasoned pumpkin seeds were sent in bulk to a snack food company in Pittsburgh, PA for packaging and labeling (figure 3). After we produced a bulk supply of seasoned and roasted pumpkin seeds, we conducted controlled sensory panel tests at OSU to determine which pumpkin seed variety and what seasoning (garlic, BBQ, salt, cinnamon sugar, pumpkin pie spice) was most preferred. We also took these products to two direct farm markets around Columbus, Smiths Farm Market and Circle S Farms in Grove City, to gauge general consumer acceptance of these seeds (figure 3).

Figure 2. Seeds of the varieties used in the trial, from the top moving clockwise, NZ hybrid, Mystic Plus, Small sugar, Pik-a-pie, and Snackjack.

Figure 3. Package and labeling of small pumpkin seed sample packs (left), and a pumpkin seed display at Smith's Farm Market, Columbus (right).

Phase three involved the marketing research and consumer demand pieces to determine how much demand there is for this type of product and what constitutes a fair market price for the product. This information will give us insight into the potential for bringing this product to market.

Project Approach:

This project was a very pragmatic, production-oriented evaluation trial that would allow for readily adapting and scaling up if positive results were achieved. Although we were successful in the variety selection and production goals, there some aspects of harvesting and processing that were beyond our capabilities given the monetary limitations of the grant. To be clear, the barriers that we met can be overcome with existing equipment, such as mechanical seed harvesters, commercial driers and roasters, but the start up costs would be in excess of several hundred thousand dollars.

The production and processing expertise supplied by Ohio State University was able to solve many of the technical issues of the project, but at a much smaller scale that substituted labor for mechanization of specific processes. This was not a sustainable model and we would not recommend growers pursuing this type of value added enterprise unless they incorporate equipment specifically designed to assist with seed production and processing.

Goals & Outcomes Achieved:

1. To define the horticultural aspects, pest management challenges, and yield potential surrounding the production of pumpkin seed as a snack food.

a. Select 4-6 potential pumpkin hybrids to evaluate for seed production.

b. Determine optimal spacing configuration to maximize fruit and seed production.

c. Establish horticultural and pest management practices that maximize productivity.

d. Determine varieties yields and outline harvesting procedures.

In January of 2010, 15 varieties of squash and pumpkin were evaluated for qualities suitable for pumpkin seed production. From those varieties, Pik-a-pie, Small sugar, Mystic plus, Snackjack, and NZ HSC 151 were selected to be placed in our trials at the research station and on grower's farms. Based on research conducted in 2009, we determined the optimal spacing for the varieties would be to direct seed them at 1-2 feet in row and five feet between rows. After monitoring the varieties closely in 2010 for pests, we concluded they would be attacked by the same complex of early season insects as other cucurbits, and they would be susceptible to the same disease complex such as powdery mildew and bacterial infections as other cucurbits. Although the varieties were sprayed every 7-10 days for disease management considerations, given that these fruit need not be cosmetically perfect, the number of fungicide applications could be reduced without necessarily affecting seed quality. At the Western Ag Research Station, yield of the five varieties ranged from 8.7 to 11.9 tons of fruit per acre, which translates to 515 to 728 pounds of seed per acre. Yields did vary by location. See attached Powerpoint "**Pumpkin Seeds: A Locally Produced Healthy Snack Food**" for yield specifics by site. Harvesting was all done using manual labor, with a sub sample of 200-300 pounds of fruit from each variety transported to the Columbus Pilot Plant where seed was extracted, cleaned, dried, and roasted into the final product, dry edible seed.

2. To define the processing steps and efficiency in converting raw pumpkin seed into an edible snack food, concluding with acceptability taste tests.

a. Determine protocol and calculate seed extraction efficiency.

b. Validate seed roasting protocols noted by in research journal articles.

c. Apply seasonings to seeds and conduct acceptability tests.

d. Package samples for further acceptability and marketing tests.

Seed extraction from the fruit was all done manually by first cutting the fruit in half with a meat saw, and then scraping out the seeds. The efficiency of extraction was estimated at 95% or higher. The ease of seed extraction differed between varieties, based on how tightly the seeds were bound inside the fruit locules and pulp. The extracted seed and pulp mixture was further cleaned by placing approximately 20 pounds into a 30 quart stand mixer at a low speed for about

15 minutes. The contents of the mixer were then poured into a large colander that was flushed with water to remove the liquefied pulp, leaving only the clean seeds. The roasting protocol varied slightly based on the hybrid, but was either 15 or 30 minutes at 300^0 F. The seasoning was applied as the hot seeds were removed from the roasting ovens, sprayed with a light amount of corn oil, and then tossed with a measured amount of seasoning, either salt, bbq, garlic, pumpkin pie spice, or vanilla cinnamon. Once all the seed and flavoring combinations were created, we bulk shipped the seeds to Pittsburgh Snax & Nut Company, and they packaged the seeds into small 1-2 ounce sample packs with a custom label (figure 3). These prepackaged samples were used in the local farm markets display areas (figure 3). Bulk seeds were used in the controlled acceptability tests on OSU's campus at the Parker Food Science building.

3. To conduct consumer acceptance and willingness to pay surveys, marketing analysis, product demonstration, and to generate cost of production data

a. Conduct consumer willingness to pay surveys.

b. Conduct focus groups with consumers, producers, and potential processors.

c. Conduct product demonstrations at select venues.

d. Prepare final cost of production analysis.

Consumer acceptance aspects of the pumpkin seed project were carried out at several venues to collect "taste likeability" and "willingness to pay" information. In controlled testing facilities at the Parker Food Science and Technology building on OSU's main campus, consumers were recruited for three distinct tasting and sensory panel evaluations. In the final analysis, panelist most preferred seeds from Snackjack and NZ HSC 151, followed by Pik-a-pie, Small sugar, and Mystic plus. These results are based on seeds that were roasted and seasoned only with salt. In terms of preferred flavors on the most preferred seed (Snackjack) salt, bbq, and garlic were statistically liked more than pumpkin pie spice or vanilla cinnamon, showing a clear preference for savory over sweet seasonings. As a part of the sensory evaluations, testers were asked how much they would be willing to pay for a two-ounce sample of the seeds. Forty four of 78 respondents indicated they would be willing to pay between \$0.99-\$1.29, which translates into \$8.00-\$10.32 per pound. Other consumer studies conducted by S. Ernst at two additional locations indicate a willingness to pay between \$1.50 and \$2.50 for the same sized sample. A preliminary Excel spreadsheet has been generated to estimate the costs and potential profits of a seed production enterprise (see attached).

Beneficiaries:

In regards to quantification of human beneficiaries and economic impact of this implemented project, please note that three seed retailers, Trophy Nut and Windy Acre Farms in Ohio, and Gerbs Pumpkin Seeds in Rhode Island, have openly supported a continuation of this project to explore mechanical seed extraction by stating they annually consume nearly 80,000 pounds of hulled and hull-less pumpkin seeds from foreign sources, mostly China and Mexico. All three of

these companies, and no doubt many other companies, would be very interested in obtaining a domestic supply for these seeds. Based on our harvest estimates of 10 tons of fruit per acre yielding approximately 600 pounds of dry seed, the amount of land base required to supply 80,000 pounds of seed would be around 130 acres. This production area could in the form of one large grower producing the entire crop or 130 smaller producers each growing one acre fields of the crop, or any configuration between those two extremes. The estimated wholesale price to growers for these seeds ranges between $2.15 to $2.65 per pound, allowing growers to gross between $1,290 and $1,590 per acre, and putting the entire crop value between $172,000 and $212,000. Retail prices for these seeds range between $4.00 and $13.90 pound, adding up to $11.25 of value per pound to these seeds at the retail level. Due to the high amount of manual labor required for fruit harvest and seed extraction, estimated at 320 hours per acre for approximately 600 pounds of dry seed yield, and variability in scale for drying and roasting equipment, viable economic returns per acre using this model have not been established. In conclusion, many growers, seed salesman, agrichemical and fertilizer representatives, and at least three seed retailers and their employees would likely benefit economically if this processing crop were to become established.

The beneficiaries of this project range from growers to processors to seed retailers. We have demonstrated the ability to select, grow, process, and evaluate specific pumpkin and squash hybrids that have yield and taste characteristics currently desired by the market. At the end of this project, we have acquired a tremendous amount of technical knowledge concerning the processes and methodologies of seed production, and could serve as an informed source on almost every aspect of this process to any interested party. If we are able to demonstrate this project at a larger, commercial scale, it will require specialized seed harvesting and processing equipment. Once growers see the equipment demonstrated and understand the basics of constructing a processing facility, they will be much more inclined to invest in this new industry. For growers who do not own the equipment or processing facility, they can be involved with the industry as contract growers to fill the harvesting schedule and bring the processing facility to capacity. Once those seeds are properly dried and roasted, they can be sold at whole or retail prices to several businesses within the state who in turn have markets both inside and outside Ohio. Ultimately, by having an increased domestic supply of pumpkin seeds, consumers will have greater choices in terms of buying local and supporting local businesses and growers.

Lessons Learned:
At the onset of the project we had planned the entire process, from planting to marketing, in extensive detail. We periodically faced challenges of logistics, transportation, processing, labeling and marketing, but found ways to solve all of the issues. Looking back, there were several important lessons learned.

1. **Seed harvesting is best done by specialized machines, not hand labor**. To back this fact up, we estimated it would take approximately 300 hours of labor to harvest and process one acre of pumpkin fruit into edible seeds! With such high labor requirements, the seed would not be economical to produce.
2. **Operation scale and mechanization is paramount for success**. Initially we envisioned that farmers would be able to raise small fields or sections of fields (under one acre) of pumpkins for seed and bring them to market for local consumption. Once we realized how labor intensive the

seed extraction process was, it was unrealistic to approach this value added food item without having access to pumpkin seed extraction machines, commercial driers and roasters, and proper labeling and packaging facilities. It would take approximately 200 acres of pumpkins to supply enough seed for Ohio consumption alone, and this would be the minimum to justify the acquisition of the equipment. The next step for this specialty crop work is to purchase a mechanical seed extractor, which we proposed in our follow up specialty crop proposal in 2011. Unfortunately our proposal was not selected for funding.

3. **A market does exist**. Once we started contacting local (Ohio and neighboring states) confectionary seed sales and marketing companies, we learned that there is tremendous interest in a major domestic source for these value added seeds and that the current supply is imported from China, Mexico, etc. Our vision was to build a seed production and processing industry that would scale up to meet or exceed the national demand. The model we looked to for insight and inspiration is in Illinois, which produces the most Jack-o-lantern pumpkins in the nation, and at the same time produces almost all of the domestic supply of canned pumpkin.

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Additional Information:
Attached please find an economic analysis of pumpkin seed production conducted by Stan Ernst at Ohio State University (Ernst.1@osu.edu or 614-292-6421). Any questions on the economic analysis should be directed to Mr. Ernst. Also attached is a PowerPoint presentation outlining in more detail the entire process from variety selection, yield data, and sensory data. Lastly, an Excel spread sheet is included to show the preliminary enterprise budget for pumpkin seed production.

Project Title: Specialty Crop Marketing Cooperative, Feasibility & Development

Project Summary:
The goal of the project was to study the feasibility to form marketing and other related business cooperatives to significantly increase production and improve the revenue obtained from the sale of specialty crops by Ohio's producers. Preliminary studies indicated that Ohio could significantly increase their production of and profit from locally grown specialty crops. This would positively impact the Ohio economies and local food security. A major gap existed in the number of growers, training of new growers, and how to support new growers in their early stages of farm operation to impact this goal. The study addressed these important issues through research of best practices and models to help in dealing with these local issues and in systems design. Farming and related supported businesses duty and task list and needed information analysis was strongly needed as the old paradigm of growing new growers was not going to satisfy the local need.

The goal of the project was also to facilitate and provide technical support for the formation of new specialty crop cooperatives. Addressing this goal was important due to the complexity of working with a group of individuals/growers to help them leverage the advantage of larger numbers for marketing, purchasing, training, networking, sharing equipment, etc.

The goal of the project is to study the feasibility to form marketing and other related business cooperatives to significantly increase production and improve the revenue obtained from the sale of specialty crops by Ohio's producers.

Project Approach:

Cooperative Feasibility Study - The Ohio State University South Center formed a steering committee, facilitated/conducted feasibility studies, and conducted an Ohio specialty crop businesses gap/needs analysis. The steering committee represented all specialty crop areas growers in areas such as fruits, vegetables, grapes, chestnuts, etc. in Ohio and other related stakeholders support groups. The committee met and maintained minutes of the meeting. The Ohio State University South Centers' Specialty Crop Extension Educators, Business Development, and research staff made up the committee and included:

- Maurus Brown, sub-committee chair, Feasibility Study activities.
- Brad Bergefurd, Horticulture Extension Educator and specialty crop grower
- Julie Fox, Direct Marketing Specialist, sub-committee chair, Best Practices review
- Chris Smalley, Small Business Development Counselor, sub-committee chair, Sample Business Plans development
- Tom Snyder, Program Manager, Ohio Cooperative Development Center, chair, Cooperative Development Technical Support sub-committee.
- Joy Bauman, Information Associate, recorder, and reports development
- Christie Welch, Small Business Development Counselor, Farmers' Market Specialist, and specialty crop grower - chair, Steering Committee meetings

(Amalie Lipstreu and Lori Panda, ODA also attended several meetings by phone conference)

Growers found five key issues that were most challenging for their business, including: (1) time to commit to marketing, (2) insufficient product volume, (3) ability to meet distribution requirements, (4) high costs of production and inputs, as well as cost and availability of labor, and (5) insufficient cash flow in season. Growers also responded that they would consider working with other producers to help improve their profitability by reaching new markets, adding value to existing produce, distributing product, and reducing input costs for labor, insurance, marketing and promotion, packaging, equipment and supply purchases, and employee training. To address the above concerns and to enhance economic development of specialty crop businesses, OCDC will work with local Extension Educators to build a partnership designed to assist with establishing new cooperatives and strengthening existing cooperatives with growers and related businesses. Currently this effort will involve 12 local Extension Educators and eight state-wide Extension and business development specialists and is scheduled to begin in October 2011. This partnership will be modified and expanded as needed by industry demands.

There was also an expressed need for the following items listed below in support of business development, education, and training needed to create a workforce and farms necessary to increase the production needed to locally supply specialty crops for individuals, institutions, and retail stores in Ohio:

- Effective business models/plan development
- Identification of financing options for business start-up, operation, and expansion
- Employee-owned business model provision
- Business job/occupational analysis information identification
- Training strategies and program development facilitation

Specifically, the above expressed needs should be directed at the following direct marketing specialty crop business areas as identified in the study:

1. Field/greenhouse/high tunnel crop management/operation
2. CSA management/operation
3. Food store/farm market management/operation
4. Farmers' market management/vending
5. Value-added food processing management/operation

Developing a curriculum analyses (DACUM) sessions were conducted on the above five areas using over 35 subject matter experts. A task analysis process was also used to further identify steps, performance standards, tools, equipment, supplies, and materials, required knowledge and skills, safety concerns, work behaviors, decision, cues, and errors for CSA growers and managers. Basic/foundational skills were also identified using the ACT WorkKeys analysis process. The total analysis process was completed by the end of May 2011 and the information on the task and foundational skill analysis has been posted on the Ohio Cooperative Development Center (OCDC) website. The duty and task analysis information can be used to create trainee skills check off systems and to help develop course-of-study guides and curriculum materials for training. A state-wide Non Profit Local Foods Network (NPLFN) cooperative has also formed a training and technical support committee and will use the material for their efforts. We believe the information obtained by the grant represents the most comprehensive and complete duty and task analysis list available anywhere for training program development. This will be invaluable for the development of training programs for the specialty crop business areas. Promoting growers and the supporting industries' supportive businesses could be accomplished through developing regional comprehensive training programs, sustainable incubator farms, business cooperative networks, and apprenticeship/mentor training programs. These regional efforts could be located near distressed communities to also serve the unemployed and underemployed, food deserts, part-time growers, and local consumers.

To meet the above needs, concerns, and development areas identified in the feasibility study, it was concluded that there is a strong need for on-going training, technical support, and provisions for collaboration formation support. This is particularly important for new and expanding businesses. OCDC has formally partnered with Ohio regional Extension Educators and statewide Extension Educator specialists to provide continued technical support for this industry.

Best Practices Analysis - Ohio State University South Centers conducted research in the areas of specialty crop production, management, and marketing, identified best practices, and identified successful strategies of cooperative and collaborative businesses. A web search for best practices was also conducted. Results will be shared with any start-up specialty crop cooperative efforts, Ohio State University Extension Educators, and with ODA staff. Early best practices and emerging business structures were identified and reviewed. Representatives of these businesses were contacted to discuss these models, provide additional information, and answer questions about their operation. A report was developed and is included on the OCDC web site. Some early business models were identified in the following areas: (1) crop specific marketing/cooperatives; i.e. chestnut growers, apple growers, etc., (2) faith based/non-profit marketing/cooperatives which are mainly found in urban/city areas, (3) medium/large growers marketing/cooperatives contracting directly with a broker/distributer, (4) vertically integrated food systems involving growers, brokers, distributers, grocery stores, institutional buyers, and (5) direct marketing/cooperatives such as farmers' market, CSA's, and farmers' markets. Committee members participated in a USDA program which reviewed national models and preliminary findings from a survey of regional food hubs. The USDA Food Hubs Committee provided two PowerPoint presentations, "Understanding the Scope and Scale of Food Hub Operations," and a Regional "Know Your Farmer; Know Your Food" presentation that was developed by the food hub subcommittee.

Sample Cooperative Business Plans - The Ohio State University South Centers developed draft operational business and financial plans. The results to be used to guide Ohio's efforts to enhance training efforts and the specialty crop worker-owned businesses models. The results can be used to guide Ohio's efforts to enhance the specialty crop businesses. Results will be shared with any start-up specialty crop cooperative groups, all Ohio State University Extension Educators, and with ODA staff. To address the needs and gaps identified in the results of the cooperative feasibility study, the following business/financial template plans were developed:

1. A business plan for an incubator 25 acre training farm
2. A financial spread sheet for a 25 acre incubator training farm
3. A financial spread sheet for a leased 50 acre, $10,000/acre, five member/worker-owner operational and start-up business models
4. A financial spread sheet for a leased 50 acre, $7,000/acre, five member/worker-owner break-even business model
5. A financial spread sheet for an owned 50 acre, $10,000/acre start-up business model
6. A financial spread sheet for 50 acre, $6,875/acre start-up/break-even business model

The "break-even" business models would be beneficial as not everyone is going to be able to sell their entire crop of 50 acres for an average $10,000/acre, therefore giving them the opportunity to see a plan of what it takes to still make it feasible could be useful. Obviously all of these financial projections are extremely variable depending on the cropping mix, weather, marketability, business structure, etc. If and when a business effort shows further interest in a particular business structure, crop selection, and the acreage being used to raise that crop, they can then develop a business plan and financial models using these templates for their particular needs.

Cooperative Formation Support - *The* Ohio Cooperative Development Center (OCDC) provided assistance in cooperative formations. This includes one-on-one assistance, bylaws, committees and board formation assistance, and other assistance as was necessary for cooperative formations. All specialty crop cooperative formation activities and results will be shared with any start-up specialty crop cooperative groups, all Ohio State University Extension Educators, and with ODA staff. The Ohio State University South Centers, Ohio Cooperative Development Center (OCDC) is a USDA funded center serving the local food industry, rural and Appalachia communities in Ohio and West Virginia, adjacent states, and nationwide groups based in Ohio. OCDC's mission is to support improving economic conditions through the development of all types of cooperative businesses and "cooperative like" groups. OCDC is part of a business development, research, and extension education team to better provide comprehensive services for new and emerging cooperatives.

The OCDC provided over 1,850 hours of technical assistance for 22 groups and/or cooperatives from October 1, 2009 to September 30, 2011 that are related to the specialty crop industry. This technical assistance includes:

- One-on-One technical counseling
- Start-up formation kit provision
- Bylaws and board development counseling/workshops
- Business plan development assistance
- Business financial planning assistance
- Linkages to funding, grants, services, and resources
- Seed grants for start-up or implementation
- Development of incubator web sites
- Facilitation for cooperation among cooperatives
- Feasibility studies assistance

OCDC supported a total of 10 specialty crop business formations in the last two years. The OCDC accomplished this by investing 1,863 hours of direct client services, representing over 250 face-to-face sessions with 22 potential new and emerging cooperatives, and formal training for over 550 individuals annually.

Specialty Crops Related Business Formations:

- Non-Profit Local Foods Network Cooperative
- Route 9 Chestnuts Cooperative
- 6th Street Growing Community Gardens
- Holmes County Heritage Foods
- Fayette County Farmers' Market Cooperative
- Gallia County Farmers' Market
- Black Swamp Local Food and Farm Cooperative
- Trauth Edible Landscape
- Shekinah Ranch
- Circle 77 Community Market
- Stone's Throw Market

Cooperative Feasibility Study - The Ohio State University South Centers will form a steering committee, facilitate/conduct feasibility studies, and conduct an Ohio specialty crop businesses gap/needs analysis. The steering committee with represent all specialty crop areas growers in areas such as fruits, vegetables, grapes, chestnuts, etc. in Ohio and other related stakeholders support groups. The committee will meet and maintain minutes of the meeting. Minutes will be posted in the report manual.

Best Practices Analysis - Ohio State University South Centers will conduct research in the areas of specialty crop production, management, and marketing, identify best practices, and identify successful strategies of cooperative and collaborative businesses. A web search for best practices will also be conducted. Results will be published in a manual and posted on the Ohio Cooperative Development Center and OSU Direct Marketing web sites, and shared with any start-up specialty crop cooperative efforts, Ohio State University Extension, and ODA.

Sample Cooperative Business Plans - The Ohio State University South Centers will develop draft operational business and financial plans. The results to be used to guide Ohio's efforts to enhance training efforts and the specialty crop worker-owned businesses models. The results can be used to guide Ohio's efforts to enhance the specialty crop businesses. Results will be published in a manual and posted on the Ohio Cooperative Development Center and OSU Direct Marketing web sites, and shared with any start-up specialty crop cooperative groups, all Ohio State University Extension, and ODA.

Cooperative Formation Support - *The* Ohio Cooperative Development Center (OCDC) will provide assistance in cooperative formations. This includes one-on-one assistance, bylaws, committees and board formation assistance, and other assistance as necessary for cooperative formations. All specialty crop cooperative formation activities will be published in a manual and shared with Ohio State University Extension, and ODA.

Goals & Outcomes Achieved:

Growers found five key issues that were most challenging for their business, including: (1) time to commit to marketing, (2) insufficient product volume, (3) ability to meet distribution requirements, (4) high costs of production and inputs, as well as cost and availability of labor, and (5) insufficient cash flow in season. Growers also responded that they would consider working with other producers to help improve their profitability by reaching new markets, adding value to existing produce, distributing product, and reducing input costs for labor, insurance, marketing and promotion, packaging, equipment and supply purchases, and employee training. To address the above concerns and to enhance economic development of specialty crop businesses, OCDC will work with local Extension Educators to build a partnership designed to assist with establishing new cooperatives and strengthening existing cooperatives with growers and related businesses. Currently this effort will involve 12 local Extension Educators and eight state-wide Extension and business development specialists and is scheduled to begin in October 2011. This partnership will be modified and expanded as needed by industry demands.

There was also an expressed need for the following items listed below in support of business development, education, and training needed to create a workforce and farms necessary to increase the production needed to locally supply specialty crops for individuals, institutions, and retail stores in Ohio:

- Effective business models/plan development
- Identification of financing options for business start-up, operation, and expansion
- Employee-owned business model provision
- Business job/occupational analysis information identification
- Training strategies and program development facilitation

Some of the above expressed needs are beginning to be met as a result of this project's efforts; however, much more needs to done to adequately address these gaps. There needs to be a strong continuing effort to develop and implement business development, education and training materials, and systems to meet this need. OCDC will work to continually address these areas and provide on-going training, technical support, and provide support for the formation of collaborations in the areas of specialty crop production, management, and marketing.

Beneficiaries:

1. Existing small-to medium-size growers: through cooperative business structures, access to education and training, and support from OCDC and local Extension Educators (The OCDC provided over 1,850 hours of technical assistance for 22 groups and/or cooperatives from October 1, 2009 to September 30, 2011 that are related to the specialty crop industry).
2. Unemployed and underemployed: through cooperative business structures such as worker-owner cooperative options, better access to education and training, and more support from OCDC and local Extension Educators (There were 11 new cooperatives formed during the project creating the need for additional staffing).
3. Local communities supplied with more locally grown, fresh, healthy specialty crops and keeping more of their food dollars in the local community (many of the new cooperative were planning to increase production due to better marketing through the group's efforts).

Existing small- to medium-size growers: through cooperative business structures, access to education and training, and support from OCDC and local Extension Educators.

Unemployed and underemployed: through cooperative business structures such as worker-owner cooperative options, better access to education and training, and more support from OCDC and local Extension Educators.

Local communities supplied with more locally grown, fresh, healthy specialty crops and keeping more of their food dollars in the local community.

Lessons Learned:

The main lesson learned was that there previously was no comprehensive or formal strategy for growing or assisting new specialty crop producers, and no effective training system and structure available for the education and training necessary to ensure that growth.

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Additional information: See attachment

Project Title: Creation of a new generation of apple varieties for apple production

Project Summary:
This project catalyzed fruit leaders in the Midwest U.S. to work together toward selecting new high quality, disease-resistance and environmentally adapted apple varieties for local marketing. This project funded work toward the overall goal of sustainable Midwest orcharding resulting in increased consumer apple consumption for health and enjoyment. More than 8000 seedling apple trees were evaluated for fruit quality. Two critical aspects of 21st century varieties emerged from the seedling evaluation work: new varieties must have crisp texture and low ethylene. Crisp texture was shown to be the major important trait to consumers (consumer preference taste tests). As expected, flavor was also important in consumer preference. Low ethylene varieties keep well beyond the harvest window and maintain their crispness even when stored at less than ideal conditions (e.g. room temperature fruit bowls for easy grab-and-go consumption). Identification of these essential aspects of crispness and low ethylene has allowed us to more efficiently and speedily identify new variety candidates which can be further identified by consumer preference taste tests for flavor. These new varieties will be a competitive advantage for Ohio and Midwest apple growers as compared to growing common grocery store varieties and not having access to club varieties. This project selected roughly 100 seedlings for second testing propagation and evaluation at grower orchards throughout the Midwest.

Project Approach:
The goals of the SCBG-funded research were to select promising seedlings from among thousands of candidates grown by orchardists as part of the Midwest Apple Improvement Association apple breeding project. To do that a team of MAIA members (number and composition varied by time and location) walked each row several times each season and for 2 seasons during this funding. A small number of apples were harvested from each tree, checked for firmness and sugar level (to indicate ripeness) and then sliced and tasted by members of the group for texture and flavor. Apples were labeled and photographed and a rating for apple quality given by group consensus. Unusual features of each seedling were noted, e.g. appearance, flavor, tree growth form, etc. After each evaluation day a summary sheet of apples worthy of future testing was created, including relative ripening time compared with current varieties (in other words what is the current competition and how do the MAIA apples stack up). None viable candidates were eliminated in each step and viable candidates were propagated for

future evaluation across the Midwest region and the original seedling tree marked for future evaluation by our team. The results of this SCBG-funded evaluation were that more than 100 promising candidates were identified, propagated and are being further evaluated. As this project is ongoing there are thousands of non-bearing trees which will yet need to be evaluated and there are trees that were evaluated previous to the SCBG-funding for this project which were either discarded and removed or are being tested further as second test trees in grower orchards. Key apple evaluation results that will have lasting influence on this project are the new apple varieties must have crispness and they must be long-keeping without going soft. After those traits are satisfied then flavor matters and mild flavors are more pleasing to consumers than strong or unusual flavors (e.g. anise).

The true advantage to this grower-led project is that grower expertise has been utilized throughout the entire project. No one has a better feel for the pulse of consumer apple preference than growers who are selling their product to consumers and listening to their comments – and seeing what varieties sell and what varieties sit. Growers comprised most of the team that walked each row and evaluated seedlings. Pictured here is a typical volunteer team composed of growers and their families and their wheelbarrow of equipment (County Line Orchard, Sept 2010).

Prior to the research funded by this grant, the Midwest Apple Improvement Association, composed of leading apple growers throughout the Midwest, had invested 10 years in creating thousands of apple seedlings looking to combine favorable traits of high fruit quality, disease-resistance and spring frost avoidance. This project funded evaluation of 8000 of these apple seedlings, selecting the most promising and making multiple copies of them for more thorough post-grant evaluation at grower's orchards throughout the Midwest. The project utilized grower expertise in evaluating fruit from seedling trees, funding travel and supplies expenses while growers volunteered their time.

Goals & Outcomes Achieved:

The ongoing project and its progress and results has been presented to Ohio, Indiana, Missouri, Illinois, and Kentucky fruit grower winter and/or summer meetings along with annual meetings of the Midwest Apple Improvement Association. Through these informational presentations and apple tastings more than 500 growers have become aware of this project and many were already or have become members of the MAIA (100 members).

The goal was to select 20 "winners" from among the 8000 seedlings. We selected around 100 as we were pleasantly surprised at the number of seedlings producing high quality fruit. We also were pleasantly surprised by the number of growers who wish to evaluate these selections in second test (i.e. clonally propagated copies). The end result was more selections and more

copies of each selection and more grower involvement. Apple selection takes time and it will require a few more years before seedlings selected as a part of this grant are released as varieties.

Beneficiaries:

Currently the main beneficiaries of this grant are the 100 growers who have been involved in the seedling selection process and realize the high quality of the varieties in the pipeline and are encouraged to continue and expand Midwest orcharding. In 5 years the main beneficiaries of this grant will be the consumers in the Midwest who will have an amazing new array of crisp, low ethylene, flavorful new varieties which will be sustainably grown in Ohio and the Midwest.

Lessons Learned:

Growers can very positively influence their future by being active participants in applied research. In this case growers designed the crosses to be made among apple variety parents and participated in-field evaluation of apple seedlings.

Growers have tremendous expertise in consumer apple variety preference desires because they listen daily to their customers. This information was immediately transferable to in-field selection of apple seedlings with commercial potential.

When growers are intensely interested in a project they are willing to donate their time, land and growing of apple trees. It is very helpful that the SCBG money could be used to buy needed supplies, pay for some travel and also be used to pay for second test trees for grower evaluation. In other words, SCBG funding paid for some direct costs, encouraged participation and facilitated activities.

It is easily possible to create new apple seedlings for evaluation but the selection process is time consuming and needs an "all hands on deck" approach to move quickly and with perennial crops it all takes years to accomplish even with lots of participation. That's the primary reason it's not a priority of universities.

New apple varieties are essential to the lifeblood of the apple industry in the Midwest. These varieties must be environmentally adapted, disease-resistant and - very importantly for the consumer – have crispness, long keeping without going soft and widely accepted flavor. The funding associated with this SCBG encouraged growers, educated growers and involved growers and the continuation of the work from this SCBG (initial selection of second test seedlings) will result in several new varieties for Midwest growers in the next few years.

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Additional Information:
www.hort.purdue.edu/newcrop/maia/default.html (website about apple breeding project and organization newsletters); seminar OARDC Dec. 3, 2010 (Mitch Lynd and Diane Miller)

Project Title: Ohio Wine TV Expansion

Project Summary:
To improve the competitiveness of Ohio's grape and wine industry and to help the wineries differentiate themselves, the Ohio Grape Industries Committee (OGIC) requested 2009 Specialty Crop Block Grant funds to extend Ohio Wine TV, an on-line virtual wine tasting/tour program, to include regional-based videos.

These videos allowed the wineries to develop regional identities based on the wines they make, the unique experiences they offer, and the videos also helped highlight other area agritourism attractions such as vineyards, farm markets, cheese processors, etc. located in close proximity to the wineries.

These virtual videos were shared with consumers through the industries' web site, www.tasteohiowines.com, individual wineries' web sites, the industries' YouTube page, and through Constant Contact and the e-mail database the industry uses to distribute the existing Ohio Wine TV videos. The goal of this program was to increase consumer traffic and spending at the wineries, as well as surrounding agribusinesses and agritourism locations, thus creating more revenue and jobs within these communities.

Project Approach:
The OGIC contracted with Yoakam LLC, the creator of the original Ohio Wine TV program to produce and distribute four additional Ohio Wine TV videos focused on the central, northwestern, southeastern and northeastern regions of the state.
All of the state's more than 120 wineries were notified via e-mail regarding the opportunity to participate in the Ohio Wine TV program. Participating wineries were then selected on a first-come, first-serve basis.

Yoakam LLC worked with the participating wineries in each region to draft a script prior to the taping date in order to ensure a smooth delivery during the video taping process. Yoakam LLC then filmed and edited each of the videos into 7-10 minute videos featuring 4 wineries in each region, as well as other tourism destinations in and around the wineries (USDA Specialty Crop Block Grant Funds were not used to pay for this portion of the videos. OGIC matching funds paid for this portion of the program.)

After production of the videos was complete, the new regional Ohio Wine TV videos were posted on the industries' web site, http://www.tasteohiowines.com/ohio-wine-TV-videos.aspx, as well as the industries' YouTube page and notices were e-mailed to subscribers each month – Central Region (August 12, 2010); Northwest Region (September 10, 2010); Southeast Region (October 11, 2010); and Northeast Region (November 11, 2010.) The videos have since been uploaded to the industries' web site on a 12-month rotational basis with the pre-existing Ohio

Wine TV videos. These videos were also showcased at various convention and visitor bureaus' offices, as well as shown on the Ohio Proud mobile kitchen televisions during events such as the North Market Ohio Food & Wine Affair, the Ohio State Fair, Fabulous Food Show, etc.

Goals & Outcomes Achieved:

There were more than 2,500 subscribers to the Ohio Wine TV program, with the site receiving approximately 250 new subscribers a month. The industries' web site, www.tasteohiowines.com, where the videos are housed on the front page, also receives more than 100,000 unique visitors per month. In addition, the Ohio Wine TV programs have also been highlighted on the industries' Facebook page, which has more than 1,200 likes.
The OGIC estimates that more than 150,000 consumers have seen one or more of these videos over the past 12 months.

Ohio wine sales in the state grew from 4.5 percent of the market share three years ago to nearly 6.5 percent in 2011. Although the growth in Ohio wine sales cannot be directly attributed to the Ohio Wine TV videos, they have helped consumers learn more about Ohio wine, farmers' markets and agri-tourism destinations and increased consumer visits at these locations across the state.

Another indirect result of increased consumer awareness is reflected by the fact that the OGIC has received more than 25 requests from Ohio farmers' markets to showcase wine as a part of their weekly market offerings because consumers are demanding local produce and wine be made available at the same locations. Although state liquor laws do not allow wineries to participate in farmers' markets more than six times per year, many farmers' markets and wineries are working together to hopefully include wine in the markets' monthly offerings beginning in 2012.

Unfortunately, the number of subscribers did not double as expected. It did increase by 20% and the view rate is around 60 percent. However, more and more individuals are viewing these videos through other means such as the industry web site, YouTube page, and individual winery web pages.

Beneficiaries:

The beneficiaries of the Ohio Wine TV regional videos include: Ohio wineries (wine sales have doubled in past five years), farmers' markets (working on ability to include wine in monthly market offerings because of consumer demand), and Ohio's consumers (more than 2 million consumers visiting Ohio wineries annually.)

Lessons Learned:

One lesson learned is that more and more wineries want to be a part of this program, therefore, the industry is considering how to partner with other specialty crop and agritourism destinations to continue this program in future years.

One winery, Gervasi Vineyard, even paid for the production of their very own winery and vineyard video, as a result of seeing the high-quality work that went into the production of these Ohio Wine TV videos. Their video can be viewed on the Ohio Wine TV program at

http://www.tasteohiowines.com/ohio-wine-TV-videos.aspx and clicking on “Channels” and then “Feature Video.”

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Project Title: Expansion of the bramble industry by resolving weed control problems

Project Summary:
Bramble demand has increased rapidly in Ohio due to the public recognition of their health benefits and high levels of valuable antioxidants. However, inadequate weed control is the number one production problem that limits the expansion of the bramble industry in the state. The objective of this project was resolve this problem conducting applied research that develop crop safety and performance data needed to support registration. The brambles' superficial root system and their nature as a perennial crop limit the potential for mechanical weed control. Also, perennial weeds interfere severely with cultural practices and harvest. An effective weed control program should include seedling weed control during the planting year, and perennial weed control during the following years. Our experience with this crop, indicates both aspects can be achieved by selective herbicides such as Matrix (rimsulfuron) and Callisto (mesotrione) in midspring applications. Additionally, Chateau (flumioxazin) has shown excellent selectivity applied to dormant plant in early spring. To control perennial weeds such as thistle, the post-emergence herbicide Stinger (clopyralid) has shown excellent selectivity and performance when applied to dormant plants in early spring or late fall.

Project Approach:

Study 1. Bramble Variety Tolerance to New Herbicides (Greenhouse 2009).
The objective of this screening trial with four POST treatments and six PRE treatments was to evaluate the tolerance of new bramble cultivars to foliar *vs* soil herbicides applications. This trial was conducted in the greenhouse using potted plants with a mixed Wooster Silt Loam soil, 2.33% organic matter, a CEC of 13.6 and a pH of 7.4. Oneyear-old red raspberries (*Rubus idaeus* var. Caroline –Primocane and var. Nova –Floricane), black raspberries (*R. occidentalis* var. Jewel) and blackberry (*R. allegheniensis*var. Chester) were donated by Nourse Farms. Herbicides were applied to the soil, or to the foliage and soil; thereby, simulating a PRE application and a POST application, respectively. All POST treatments were applied 18 inches above the foliage using CO2sprayer with four flat fan 8002 EVS nozzles at 40 PSI set to deliver 25 GPA; while all thePRE treatments were applied with a micropipette directly to the soil in the pots. The herbicides used were Callisto (mesotrione), Chateau (flumioxazin), Matrix (rimsulfuron), Stinger (clopyralid), Casoron (dichlobenil) and Surflan (oryzalin) along with an untreated control. Two herbicides, Surflan (oryzalin) and Casoron (dichlobenil) were used only in the PRE treatments, because they are specially formulated to be applied to the soil. The trials were arranged in a split plot design with herbicides as the main plot and varieties as the sub-plot factor, and four replications. Crop injury was assessed visually at 4, 7, 14 and 21 days after treatment. PRE Application POST Application *Above: Application mode of our treatments.* Data indicated that tolerance is greater in blackberries>red raspberry>black raspberry. Caroline was the most sensitive variety, while Chester was comparatively most tolerant.

The associated injury symptoms in Caroline raspberries plants were chlorosis, necrosis and curly leaves. PRE treatments showed a higher damage with Callisto at 12 oz/A, followed by Callisto at 6 oz/A. Surflan caused slight damage at 4 qt/A, with Casoron at 100 Lbs/A being the safest of all the PRE treatments. When Chateau was applied POST injury was more severe and was rate dependent with 12 oz/A causing more severe injury than 6 oz/A. Among treatments, the safest

was Stinger at the lower rate of 5.33 oz/A. In general brambles were recovering from injury of all treatments by the last rating done at 21 days after treatment.

Study 2. Herbicides to prevent weed establishment in newly planted brambles.
The objective of this study was to evaluate and collect weed control and crop injury data to determine the best herbicide to provide early season weed control and maximum crop safety in newly planted brambles. The experiment was a screening trial with five POST treatments located at the OARDC Unit II farm in Wooster, OH. The soil was a Wooster Silt loam, 3% organic matter, a CEC of 12.8, and a pH of 6. The trial was arranged in a split plot design with main plots consisting of herbicides and sub-plots consisting of bramble cultivars, with four replications. Each plot was a single row 15 feet long and 5 feet wide. The trial was established with one-year-old red raspberries (*Rubus idaeus* var. Caroline and var. Nova) and blackberries (*Rubus allegheniensis* var. Chester).

The herbicides used were Chateau (flumioxazin), Goaltender (oxyfluorfen), Prowl (pendimethalin), Sinbar (terbacil) and Surflan (oryzalin) along with an untreated control. Treatments were applied 18 inches above the foliage using a CO2 backpack sprayer with four flat fan 8002 EVS nozzles at 40 PSI set to deliver 25 GPA. Herbicides were applied three days after transplanting. Weed control and crop injury ratings were recorded 2, 4, 6, 8, 10 and 24 weeks after treatment. No yields were taken during the first year. The same treatments were reapplied the following year in the same plots. Through the study the untreated control was maintained free of weeds by hand-weeding to facilitate evaluation of crop tolerance and prevent seedling establishment that could affect our results in the future. Also, grasses were controlled with Select Max (clethodim) at 32 fl oz/A. Additionally at the beginning of winter Casoron (dichlobenil) at 2.8 gal/A was applied to all plots. The parameters considered to measure the crop tolerance were the percentage of chlorosis, necrosis and reduction of growth of bramble plants.

While the weed control was measured quantitatively by assessing the percent ground cover by predominant weeds within a randomly assigned quadrant in each treatment. Yields were taken the second year of establishment for all varieties and treatments according the ripening habits.

There was no significant crop injury in any treatment except for Matrix, which appeared to cause slight stunting (10%) at 6 weeks after treatment. Sinbar is not labeled for use on newly planted berries. However, our results indicated that Sinbar provided the best overall weed control. An exception to this observation was Canada thistle, nevertheless Sinbar presents an excellent potential method to improve weed control and further research is warranted.

Study 3. Herbicides for control of Canada thistle in established brambles.
Currently perennials cannot be controlled. Stinger (clopyralid) is an highly effective herbicide and has great potential to alleviate this problem, but uncertainties about the crop tolerance to the herbicide persist. The objective of this trial was to resolve those uncertainties, determining optimum rates and timing of Stinger applications for crop safety and thistle control.

The experiment was located at the OARDC Unit II farm in Wooster, OH. The study was a screening trial with four timings during the year and two rates of Stinger. The soil properties were similar to the trial described previously. The trial was arranged in a randomized complete

block design, with four replications. Each plot was a single row 18 feet long and 5 feet wide of two-year-old established red raspberries (*Rubus idaeus* var. Encore). Stinger was applied at two rates of 0.125 and 0.25 Lbs a.i./A in combination with 4 timings (Late spring, Post harvest, Early fall, and Late fall) along with an untreated control, resulting in 9 treatments in total. Treatments were applied to foliage using a CO2 backpack sprayer with two flat fan 8002 EVS nozzles at 40 PSI set to deliver 25 GPA. The timings of application as outlined above were June, August, October and December.

During the first year yields from untreated controls and late spring treatments were taken. The yields for the treatments applied after the harvest-season, were taken and recorded the following summer. Throughout the study the untreated control was maintained free of weeds by hand-weeding to facilitate evaluation of crop tolerance and compare the possible injury caused by the herbicide. Weeds in late fall and early spring were controlled with Casoron (dichlobenil) at 100 LBS/A. The parameters considered to measure the crop tolerance were assessed qualitatively by rating the injury over the plant, floricanes and primocanes separately. Those parameters were assessed using a linear scale of 0-100% where 0%= No crop injury and 100%= Crop death at 2, 4, 6 and 12 weeks after application.

Our results affirm that Stinger is a safe herbicide to be used in raspberries. Even though some distortion of leave shape and slightly chlorosis were detected after the herbicide use, the plants had completely recovered by four weeds after treatment.

Goals & Outcomes Achieved:

The Pesticide Clearance Request were submitted to IR4 for clopyralid, terbacil, and rimsulfuron both in 2009 and 2010.

This data was provided to IR4 program for clopyralid, terbacil, and rimsulfuron in 2009 and 2010 and will be for 2011.

The Prioritization of Food Use Projects was submitted to the IR4 program at a level B.

This has not been done, as it is dependent on the registrant companies over which we have no control. We continue to work with them to see that submission occurs in future.

The long-term goal of this research proposal was the registration of herbicides that will lead to more effective and efficient weed control. Data from these trials were supplied to the IR-4 Program (http://ir4.rutgers.edu/) and the Ohio State Liaison (Doohan) will facilitate prioritization of food use residue projects through IR4.

Beneficiaries:

Ohio bramble growers and consumers of their products are the main beneficiaries of this research. Already this research has had a positive impact on weed control especially amongst new producers who are able to start their bramble plantings off correctly because they are using good weed control methods from the outset. This research will also benefit future growers and customers. The American Berry Cooperative estimates the state could double the current 400 acres due the high demand for fresh fruit. Weed control problem has been and the primary

obstacle to keeping this from happening. As herbicides are registered, notices of the registration and recommendations for the incorporation of these technologies into brambles practices will be provided through the Ohio Fruit ICM newsletter (http://southcenters.osu.edu/horticulture/newslettersand- publications/2008-ohio-fruit-icm-news/). And finally, recommendations for these technologies will be included in OSUE Bulletin 506B2 Midwest Commercial Smal Fruit and Grape Spray Guide.

Lessons Learned:
The results of our research were presented at the Ohio Produce Growers Marketing Association annual meetings in 2009 and 2010. It was also presented to the Nation Berry Cooperative in Grand Rapids MI as well as various county meetings in Ohio reaching approximately 275 people.

This project allowed us to acquire the knowledge required to develop strategies that provide consistent and efficient weed control. We have communicated these results to the berry industry at the annual meetings of the Ohio Produce Grower's and Marketing Association during the 2010 and 2011 annual meetings. We will also present to the combined meeting of the OPGMA along with the NA Brambles Association Annual Meeting when they gather in Sandusky for their joint meeting in February. Scientific reports will also be prepared and submitted to peer reviewed journals for publication pending final statistical analysis of all data. Regarding new herbicides for bramble growers, this is time-consuming process and we are working with the IR4 project to ensure that registration occurs in a timely fashion.

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Project Title: Continuing education and outreach on GAP for small & under resourced specialty crop producers

Project Summary:
This project was motivated by input from Ohio farmers that indicated a need to continue offering good agricultural practices education. One form this input took was the formation of The Ohio Produce Marketing Agreement, a voluntary set of production standards for food safety, designed to suit the needs of Ohio growers. The OPMA was a grassroots effort by farmers for farmers, and indicated that food safety and how Ohio growers would accomplish it, was on their minds. This was further emphasized by the requirement that any farmer seeking membership in OPMA would have to attend a yearly education session on good agricultural practices (GAPs). OPMA was an obvious result of a growing concern about food safety worldwide and increased pressure

from consumers to improve quality and safety of produce. For these reasons, the project was implemented.

The general problem addressed by this project was that food safety demands were out-pacing the availability of quality education about good agricultural practices (GAPs). While programs exist, designed by many universities and organizations outside Ohio, availability of delivery-vehicles and customization of the program for specific populations (eg Amish, recent immigrant groups) did not exist. Customers –buyers, distributors, grocers, and markets/auctions- were beginning to ask for higher standards of food safety to combat growing reports of foodborne outbreaks. However, education on food safety practices backed by solid science and available in Ohio was also in short supply.

Continue education and support for Good Agricultural Practices certification associated with any Ohio Fresh Produce Marketing Agreement.

Project Approach:

The Ohio State University Extension Fruit and Vegetable Safety Team developed a "next generation," science-based, produce safety curriculum that was edited, proofed, and vetted by community growers, extension educators, researchers, and industry representatives. The program is presented in a lecture/discussion format with the inclusion of demonstrations for a hands-on aspect. A workbook was also developed and used to instruct and encourage growers to perform risk assessment on the farm.

The content of the curriculum was developed referencing original published research and a variety of source materials, including those from the Cornell University GAPs program and the Center for Innovative Food Technology (CIFT). It built upon previous work on produce safety outreach performed by this team that was formerly funded by an Ohio State University *Excellence in Engagement* Grant. The curriculum design was approached with the Ohio Produce Marketing Agreement (OPMA), currently under consideration, in mind. The program was developed on four main categories including: water, soil, handling, and traceability. These four core areas were identified by the OPMA representation. We therefore designed around these in an effort to work closely with the OPMA initiative and to integrate our work with their goals. For each of these categories, a brainstorming and risk assessment module was included in a 60-plus page workbook that compliments the program.

The risk assessment encourages growers to individualize the information for their own farm by brainstorming the activities, problems, and potential solutions unique to their own operation. This process customizes GAPs for Ohio growers and each farmer's needs, avoiding a one-size-fits-all approach, which is often cited as a disadvantage of other programs. In total, the program runs 3-hours long, and is jointly presented by 2 extension educators. This is a more detailed and complete GAPs program compared to previously presented programs in the state which varied from 15 minutes to 1 hour long sessions. Extension Education Regional Area Coordinators were contacted regarding our newly developed program to recruit their help in advertising and scheduling of programs. Programs were delivered locally in counties across the state, allowing growers the convenience of selecting a nearby program.

The program is continually updated with new research and new updates from the OPMA and the FDA Food Safety Modernization Act to keep the programming recent. Program evaluations were approached using pre and post testing.

Above: Images of the Program being presented to an audience of 80+ farmers and industry stakeholders in January. Presenters Mark Koenig and Ashley Kulhanek

Goals & Outcomes Achieved:

A three-hour, science-based, fruit and vegetable food safety curriculum was developed. The curriculum targets Ohio produce growers to teach Good Agricultural Practices (GAPs) to reduce microbial contamination of fresh produce.

The new program is more detailed, standardized across sessions, and requires a longer time commitment from farmers. The final curriculum has more specific details on water, soil, handling and traceability issues. A 60-plus page workbook was also constructed that focuses on risk assessment on the farm. It includes lists of additional resources for Ohio growers.

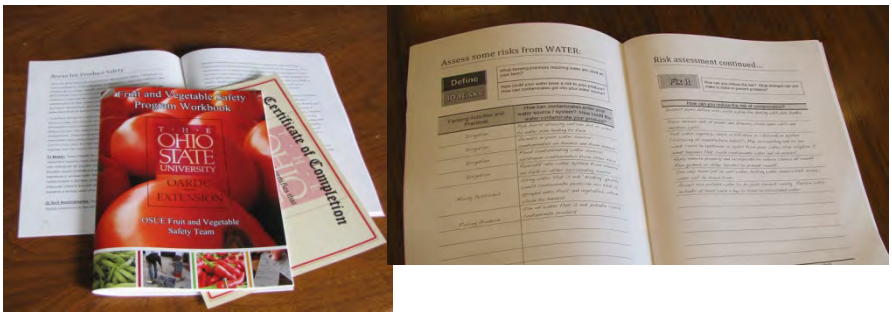
Demonstrations were designed to further comprehension. These included a pricing-gun to demonstrate labeling produce for traceability on small farms; *Glow Germ* hand-washing demonstrations for hygiene on a farm; and designs for simulated bacterial growth on Petri dish demonstrations were also developed.

The workbook was also demonstrated using document cameras to project the worksheet pages as a follow-along activity. And finally, certificates of participation were designed for distribution to attendees of the program as affidavits of course attendance.

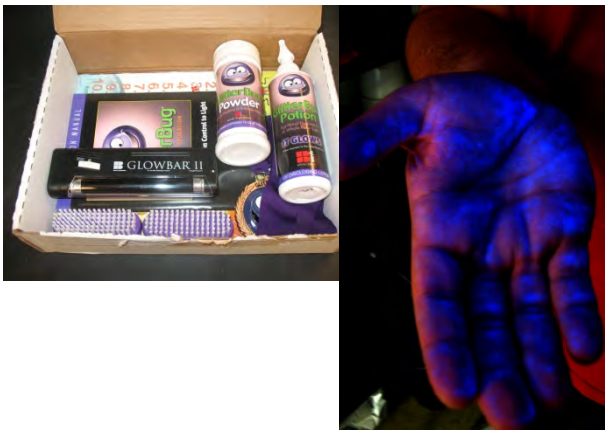
To date, it has been tested on audiences in Sandusky, Montgomery, Pike, Putnam, and Wood counties and has reached over 150 growers of Ohio. These events were the result of collaboration with local extension offices that requested the program for their county based on an existing need. Collaborations with industry organizations such as OPGMA also helped to arrange the schedules of the produce safety program where interest existed. As a result, the program has been integrated into the Ohio Produce Growers and Marketers Association (OPGMA) annual winter congress and will continue to be presented there yearly.

Preliminary evaluations of pre and posttests suggest a knowledge gain based on a significant change in overall test scores between pre and post iterations. Over 80% of respondents also

found the program to be informative to very informative, and the workbook likely to very likely to be used independently back at home.

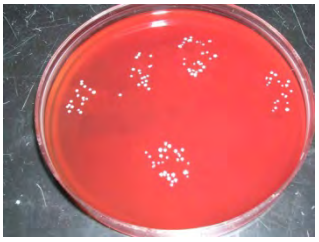


Above: 60+ page workbook and certificate of completion



Above left: Glow Germ hand hygiene kit being demonstrated on hands

Above right: Price gun used to demonstrate traceability labels



Above: Petri dish with bacterial colonies grown from fingerprints. This design will be replicated with wax and used as a visual aid for bacterial growth and hand hygiene.

Beneficiaries:

The direct beneficiaries are the Ohio produce growers who attended the 3-hour program first hand and obtained materials, participated in discussion, and saw the presentation. Additionally, the customers who purchase from these growers therefore benefit from the farms that use the course.

The Ohio Produce Marketing Agreement (OPMA) benefits by having an established and trusted source of GAPs education that satisfies the early requirement of the marketing agreement for produce safety education credits prior to certification in the OPMA.

Lessons Learned:

The OSUE Fruit and Vegetable Team has learned what is required to maintain such a program at little to no cost to growers. Unfortunately, initial estimates of program operating costs were underestimated, resulting in challenges in continuing to present the programs to Ohio growers in the long-term. At the current rate, the team will be unable to continue providing this crucial service. This lesson will further complicate future delivery of a program because many Ohio growers are not willing to pay a registration fee for such a produce safety program; at least while the GAPs requirements are voluntary. Until GAPs are mandatory, there will exist farms that do not find attending courses worth their time. We anticipate that as the FDA deadline approaches, as OPMA becomes official, or as buyers tighten their requirements, attendance will climb. Other lessons learned include the changing nature of research on food safety. Many questions that are asked by producers cannot be answered with any certainty yet. For instance, the use of numeric generic *E.coli* counts as an indicator of possible contamination events is now being questioned as an accurate predictor. We know that research is incomplete when it comes to what GAPs recommendations should be made. We include in this program all the known research published to-date on safety; however, there are still gray areas being researched and it is critical that the pace of research increase. Through inquiries from producers we are able to suggest research studies to PI's to help speed along critical studies that are of greatest interest to Ohio audiences *(i.e.* studies on horse manure due to the queries from Amish growers and those concerned about Amish farming practices. A study from OSU found horse manure to be free of *E.coli* O157:H7, and further discovered a recommendation to prevent co-habitation between horses and ruminant animals).

A positive lesson learned involves a group of Ohio growers that are ahead of the curve, when it comes to produce safety. These growers have attended various GAPs programs before and are now anxious for the next wave of GAPs information that does not repeat information from previously attended programs. Therefore, we will have to improve and provide even more advanced versions for the eager growers of the state.

We have also learned lessons on education for individuals for whom English is a second language… or not a language at all. Translation is challenging. We learned that translators must be trained in GAPs first, and perhaps preferably have a background or understanding of farm activities. The issue was that merely translating words was not sufficient, but that the translators needed to have an understanding to translate the concept as a whole.

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Additional Information:

Work on produce safety education must continue into the future. The content of fruit and vegetable safety programming must expand as more research is conducted. Growers will need, not only refresher courses, but also courses to add to their repertoire of food safety knowledge. More growers must be recruited into the program, as resistance to implementing food safety

plans still exists due to the voluntary nature of most food safety programs today. With over 2,500 growers in Ohio, work must continue on food safety in the state.

Project Title: Development of a novel on-line ordering and control distribution system for specialty crops

Project Summary:
This project focused on developing a novel online ordering system and central distribution location as part of a year-round market place to connect local producers of specialty crops with consumers to improve ease of purchasing for individuals and institutions, decrease marketing time, reduce distribution costs and encourage expanded production for specialty crop producers.

Project Approach:
This Specialty Crop Grant helped us begin the first phase of the Wooster Local Foods Cooperative (DBA Local Roots Market and Café). The mission of Local Roots Market was to connect specialty crop producers with consumers by helping them market their products using an online ordering system plus stocking their products on shelves, in coolers and in freezers in a market setting. A point of sale program was used to print labels with the producer's identifying number, their product number (for their inventory) and pricing so products could be identified, stocked in the market and scanned at the register. All sales were recorded in the computer program enabling tracking of products to producers. All producers receive a paycheck for their sales every two weeks. This enabled producers to drop off products and go back to farming, unlike the traditional farmer's markets. This also made purchasing easier for the customer enabling them to purchase from numerous farmers with one transaction at a cash register with cash, check, credit card or food assistance card.

In addition to selling fruits vegetables and other specialty crops the plan was to create a community gathering place to encourage healthy eating. The plan included teaching and demonstrating cooking techniques of fruits and vegetables, giving samples of the prepared foods and teaching community members how to grow and preserve them to increase availability all year long. Grant funds were used to purchase a portable demonstration kitchen (complete with oven, two cook tops, a sink and counter, cookware and an overhead mirror) to be used for this purpose.

Goals & Outcomes Achieved:

- At the start of this grant period Local Roots had not begun operation. The grant funding made it possible to set up an online ordering system and point of sale market by purchasing computers, cash registers, printers for labels, scanners, wireless router. This grant also purchased coolers, freezers and storage bins enabling the store to hold specialty crops safely until customers purchased them.
- The market opened and on-line sales began at the end of January, 2010 with one day a week for market sales and online order pickup. As our producer numbers, volunteer workers and sales increased we expanded market hours to three days then four and finally 6 days a week after 18 months of operation. Some of our producers installed new

greenhouses this past year to extend the growing season and we saw a marked increase in specialty crop availability in 2011.

- The online sales program is accessed from the local roots website and membership is required for purchasing. http://localrootswooster.com/shop/ Producers are given instruction on how to add products and there are currently 515 products listed. Orders are taken over a three day period, the order is closed to give producers time to make sure they can supply what is ordered or communicate back if they can't and then the customers have a day to pick up their orders. Order pick up is self serve and regular customers collect their order and pay at the cash register. New customers ask at the register and are shown how to find their purchases for future pickups.
- Sixty two specialty crop producers increased sales and decreased time spent marketing in 2010 and 2011 by selling at Local Roots Market with 27 of them also selling specialty crops using the on-line ordering system.
- Part of our plan to make locally grown specialty crops available all year was to renovate the building to allow licensure for food processing by the Wayne County Health Department (WCHD). We were able to complete renovations to a small prep kitchen area and a café for lunch service and ready to eat take out foods using volunteer labor. In July of 2011 we received licensing allowing fruits and vegetables to be washed, chopped, cooked and sold to eat on location and as packaged take out products. Now our producers are selling more products with less waste and are increasing the value of their products. We also received a donation of a vacuum packer and some of our producers have packaged and frozen fruits, herbs and vegetables to be sold in the winter months.

Beneficiaries:

Specialty Crop Producers

Increased sales of locally grown specialty crops - Sale totals in 2010 and the first eight months of 2011 were $204,542 from the sale of specialty crops. The top selling specialty crop producers (seven producers) sold an average of $600 to $1500 a month between January and August of 2011. Sales at Local Roots have increased the markets for 62 specialty crop producers in Wayne, Holmes, Ashland, Stark and Medina counties.

Educational programs for increased production and sales – Specialty Crop Block Grant Program funding was used to purchase a demonstration kitchen which has been used to teach consumers how specialty crops taste and how to prepare them. We had planned to have one demonstration or class per month but volunteers and producers have enthusiastically offered from 4 to 10 programs per month. Local Roots producers supplied ingredients from those they are currently selling in the market to be used in demonstrations and always saw increased sales as a result of consumer education. Cooking demonstrations are to be held every Saturday for about 80 people each week. Additional classes that have been held in the market include the following:

- Gardening classes taught included: Growing Garlic; Growing Mushrooms; Growing Greens all year; Organic Vegetable Gardening; Seed Starting; Tomato Diseases - How to Treat and Prevent Them; Growing Herbs in Containers; and Square Foot Vegetable Gardening.

- Food preservation classes were taught using the demonstration kitchen including: canning, freezing and drying of fruits and vegetables all repeated in the second year.

Consumer education exceeded our measurable outcomes by more than 400%.

Community – individuals, families, students, children, seniors

Improved nutrition for customers –

- Three members taught healthy recipes with cooking demonstrations at the Wayne County Health Fair. Attendance was approximately 500.
- Cooking demonstrations and tastings of specialty crops for Ohio State University employees on the Wooster campus for between 100 and 200 people.
- Local Roots provided cooking classes and nutrition programs to community groups including families of children in the Head Start Program and the families of Park View Elementary School.
- Volunteers from Local Roots helped organize and work with The United Way to start a community garden program and taught three cooking classes of the produce as it was ready to harvest.
- A Wellness Lunch for 25 employees of the OARDC/OSU was held serving a specialty crops lunch (Curried Butternut Squash Soup, Mixed Greens Salad with Julienned Turnips and Maple Balsamic Vinaigrette and Toasted Baguette with Tomatoes and Basil) and a presentation on why eating locally grown food is healthier was given by our market manager.

Job creation

- A market manager was hired to manage the market, volunteer labor and online orders.
- As a cooperative, our goal has never been to maximize profits for a few, but to keep costs low and return as much money as possible to local farms and other community members. By providing a marketplace and low cost of entry, we have opened the door to small business entrepreneurs and thus have helped to grow jobs in our community.
- As stated in the SCG grant proposal, we hoped to help other communities develop similar local foods cooperatives to help strengthen local economies and create local jobs. We have held a minimum of 20 meetings in the Local Roots building at the request of county extension agents, Farm Bureau, and community groups similar to our own original steering committee. We are now in the process of actively helping a neighboring community open a facility in their town. Additionally we have given tours and informational talks with four other communities in Ohio who are enthusiastically organizing cooperatives. We have also given tours and held discussions with representatives of communities in North Carolina, Japan, China and Iraq interested in learning more about forming cooperatives and we have communicated with phone calls and lengthy emails with community organizers in Vermont, Montana and Texas.
- The market café has created the opportunity for four chefs (previously unemployed) to create their own business within the cooperative.

Benefits

- This project has given our 62 specialty crop producers a location to sell their products twelve months a year, six days a week. Their marketing time is reduced from hours

sitting at Farmer's Markets to simply dropping off products when it is most convenient for them. They have benefitted from increased income and time.

- Specialty crops sold include fresh fruits and vegetables, apple cider, grape juice, fruit jams and jellies, tree nuts, honey, maple syrup, herbs (fresh and dried), plants and cut flowers. Vegetables continue to be our top seller and we expect specialty crop sales to continue to increase in 2012.
- At least five of our producers have built new greenhouses in the past year to enable expansion of specialty crop production.
- Our café opened in June of 2011 and sources ingredients for lunch and ready-to-eat take out foods from our producers. The café purchases the majority of ingredients directly from the producers including vegetables, fruits, tree nuts, honey, maple syrup, and fresh and dried herbs. The menu includes soups, salads and sandwiches using the ingredients currently in season. This is increasing sales of many, otherwise unmarketable, fruits and vegetables, since appearance is not an issue when foods are chopped and cooked as when they are displayed on store shelves.
- The café prep kitchen (although small) is also available to producers to do some processing such as washing, chopping, vacuum packaging and adding value to their products. Our producers began vacuum packaging and freezing fruits, vegetables and herbs and making fresh salsas, soups and humus for sale in the market this month. We anticipate many producers extending their season of sales into the fall and winter by using the County Health Department approved kitchen facility.

Lessons Learned:

- We knew winter months would be more difficult to keep shelves stocked with fruits and vegetables and we tried to encourage producers to plan for additional late crops. The first winter was sparse since producers really didn't know what to expect from Local Roots customers. One vegetable producer quickly ran out of cabbage and exclaimed that she would not have sold the bulk of her cabbage crop at a produce auction if she had an idea what the demand for it would be at Local Roots. Now that they have seen the demand for their products during winter months, many our specialty crop producers have planned accordingly and we expect to have a much greater selection and quantity in the market in 2011/2012.
- We expected the online sales to do much better than they have due to the busy lifestyle of most Americans. At the start, many customers ordered online, not just to save time but also to ensure that they would get some products before they ran out. Now that the store carries a much wider selection, for more of the year, and is opened six days a week, people don't seem as concerned with ordering ahead. Many people tried out the online ordering but found that they also wanted to look around and see what was new in the market. Those who buy online also purchase in the store and many have stopped buying online all together.
- Local restaurants and institutions are purchasing from Local Roots but chefs come to the market and purchase what is in season or is a good bargain rather than ordering online.
- We have progressed with our plans much faster than expected and have acquired funding to begin renovation of ¼ of our market building into a commercial kitchen. It will be used

by cooperative members to add value and preserve their products on a much larger scale than is possible in the current café kitchen.

Contact:
Betsy Anderson
Board of Directors/President
betsy.stebbins.anderson@gmail.com

Additional Information (websites, photos or publications):

- The online ordering site and all market information is kept current on the Local Roots website: www.localrootswooster.com
- Newsletters have been written every month since we began organizing (29 issues to date) and are archived on our website under the News and Resources tab: www.localrootswooster.com
- Local Roots has been recognized in regional & national publications including Edible Columbus, The Cleveland Plain Dealer, The Akron Beacon Journal, The Columbus Dispatch, Mother Earth News, and Farm & Dairy magazine http://www.farmanddairy.com/news/local-roots-plants-new-market-in-downtown-wooster/13419.html.
- We participated in the Northeast Ohio (NEO) Local Food Assessment studying local food systems in a 16 county region. http://www.neofoodweb.org/sites/default/files/resources/the25shift-foodlocalizationintheNEOregion.pdf
- Local Roots Facebook page: http://www.facebook.com/pages/Local-Roots-Market-Caf%C3%A9/142459175781117
- Online blogs: http://chiotsrun.com/2010/02/15/local-roots-market-in-wooster-oh-2/
- The Daily Southerner, an article describing Local Roots as a model for Tarboro, NC http://dailysoutherner.com/garden/x66809842/Local-Roots-A-New-Farmers-Market-Model

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Project Title: Specialty crop product development & market expansion

Project Summary:
The purpose of this proposal to the Ohio Specialty Crop Promotion Project is to capitalize on the strength of the established FWL farm and processors association network already in place, as well as recent improvements to the Food Ventures Center processing capacity, to create new retail and institutional commercial products utilizing local fruit and vegetables.

The primary accomplishment of the project included:
1. The strengthening of the Food We Love collaborative brand program for farmers and specialty crop value-added processors to increase market access through direct and wholesale marketing channels. Educational activities enabled the Food We Love brand to expand the marketing and

promotion of farm fresh and "fresh cut" specialty crops through collaborative campaigns at farmers markets and grocery stores.

2. Expanded education and outreach to Appalachia Ohio farmers and organic growers of fresh fruits and vegetables on the market opportunities, product development and processing technologies to
package thermally processed, "fresh cut," "fresh packed" or frozen food product lines utilizing ACEnet's shared-use food incubator. Outreach and educational activities included workshops, facility tours, conference presentations, Retail Ready curriculum development, expansion of a collaborative web portal (ohiofoodshed.org) and webinars.

ACEnet staff member Leslie Schaller and Larry Fisher promoted the development of farm "fresh cut," micro-processed, thermally processed and frozen food products utilizing fresh ingredients from Appalachia Ohio fruit and vegetable farmers in ACEnet's Food Ventures Center. During project work plan, Larry Fisher, Food Ventures Center director, worked with existing specialty crop processors, farmers' market vendors and new incubator farmers preparing value-added product lines throughout the 2010 harvest season.

Project Approach:

Training and Technical Assistance: As in previous quarters ACEnet staff has continued to develop power points, new marketing materials on Food We Love outreach information. We continue to post info to the Food We Love community recently added to the ohiofoodshed.org website/blog and the Ohio Market Maker is also being promoted to our tenants and clients. We hosted additional tours and trainings listed at both the Food Ventures Center and other locations in Appalachia Ohio counties. A number of trainings outside of Athens county occurred in Perry, Morgan county and Youngstown --- the Youngstown workshops attracted farmers from the area farmers market representing Mahoning, Trumbull and Columbiana counties.

Over 2010 ACEnet staff worked with Ohio State Extension and the Ohio Department of Agriculture to launch the Retail Ready curricula, the first was training in Athens County on Monday, April 5th. We also disseminated information on the Food We Love brand program, the Food Ventures Center services and the processing surveys at this and other upcoming Retail Ready workshops planned for the 2010 summer and fall months. Other workshops on value-adding, labeling, branding and wholesale marketing were also implemented with the following results.

Number of existing farmers and food producers participating in educational activities. (Project goal: 30 farmers and producers)

☐ Retail Ready class--- 9 farmers
☐ Somerset Farmers Market (4) classes– 13 farmers
☐ Corning processing and labeling class– 2 farmers
☐ Monroe County--- 3 specialty crop farmers
☐ Mahoning County (3 workshops) 8 farmers
☐ Food We Love Distribution meetings– 5 farmers
☐ Wilmington Workshop– 15 farmers

Number of new farmers and food producers participating in educational activities. (goal 50 farmers and producers representing 10 of the targeted counties.)

☐ Perry County– 13 specialty crop farmers
☐ Monroe County--- 3 specialty crop farmers
☐ Retail Ready training– 7 farmers attended (representing 5 counties)
☐ Trumbull & Mahoning counties– 18 farmers
☐ City of Wilmington--- approximately 15 farm families

Outreach to Wholesale Buyers: In May 2010 we supplied the Athens Kroger with information on our larger local and organic growers to prototype a fresh purchasing program in the Athens Kroger. Shade River Organics, Cowdery Farms, Green Edge Gardens and Starline Organics are being considered by local management. We have also made suggestions to the management about possible fresh cut or packed items that could be featured. Depending on how this moves forward—maybe a farmer's market area either outside or in---Food We Love signage and informational materials, as well as Ohio Proud info will be utilized. ACEnet staff with partner Rural Action has met with buyers and chefs form Whole Foods, Sysco (Local Crop,) Kroger, The Wilds and other Athens restaurants to increase distribution of fresh products and determine how to design new Food We Love marketing materials for fresh items on restaurant menus and retail shelves. More and more processors are sourcing ingredients at the Chesterhill Produce Auction now owned and operated by Rural Action. Some of the restaurant chefs are also interested in following Casa Nueva and Della Zona's lead to do more preservation of fresh produce during the harvest season. These partnerships are a big plus for ACEnet as they increase tenant usage of the Food Ventures Center and encourages more market partners to participate with Food We Love. Our biggest challenge is with space and purchasing new equipment. We have a number of capital grants pending to hopefully retrofit

Goals and Outcomes Achieved:

Silver queen and sweet yellow corn were stripped from the cob and frozen. Some heirloom corn varieties and silver queen were included in corn salsas. Some varieties of sweet corn were incorporated as frozen corn for frozen baby food entrees.

In summary the following project goals were met:

Increase the number of farmers or food producers utilizing the Food Ventures Center for new product development. (Project goal--10-15)

1. Hugus Fruit Farm – berry flavored applesauce
2. Magnaterra Marinara -- tomato sauce
3. Casa Nueva --- roasted & brine peppers, frozen fruit & vegetables
4. Somerset Farmers Market members -- salsa
5. Bebo's Organics – frozen baby food
6. Deerview Farm -- relish
7. Shag Barkseed and Mill – black bean brownies
8. Bungtown Salsa – new pepper sauce
9. Milo's Whole Word --- new salad dressings, bruschettas and salsas
10. Integration Acres – pickles, fermented foods
11. Malabar Farms – jam

12. Blackstun Family Farm -- condiments
13. Goodness Bakes – fruit muffins
14. Avalanche --- fruit breads, vegetable foccacia
15. Tillis Highland Farm --- new pickle products
16. Starling Farms – fruit toppings

Number of farmers or food producers expanding product lines utilizing specialty crop ingredients. (goal—20 enterprises)

1. Casa Nueva Manufacturing
2. Vino de Milos
3. Village Bakery
4. Della Zona
5. Avalanche Bread & Avalanche Pizza
6. Deer View Farm
7. Magnaterra Marinara
8. Tillis Highland Farm
9. Hugus Fruit Farm
10. Integration Acres
11. Patter Farms
12. Dale's Creations
13. Mutha's Mustard
14. Integration Acres
15. Shade Winery
16. Frog Ranch Foods
17. Shepherd's Corner
18. Hometown Spirit
19. Blackstun Family Farm
20. Bebo's Organics
21. Shagbark Seed and Mill
22. Goodness Bakes
23. Starling Farms

Number of new frozen food products prototyped. (Project goal—3 products)

1. Berries: blueberries, strawberries and raspberries
2. Corn: yellow, silver queen and heirloom varieties
3. Rhurbarb
4. Squash (and in October 2011 pumpkin)
5. Green beans
6. Green peppers
7. Asparagus
8. Bebo Organics – baby food
9. Pawpaw popsicles

Beneficiaries:

Farmers growing vegetables or fruit have been the primary beneficiaries by either increasing the sales to processors, restaurants, grocers or institutions and/or by engaging in new product development at the Food Ventures Center. The names of the various farmers and processors are listed in the following chart.

Farmers Creating Value-added products	Specialty Crop Farmers increasing sales to processors	Processors growing or processing local ingredients
1. Hugus Fruit Farm – berry flavored applesauce	1. Zinn Berries - blueberries	1. Casa Nueva --- roasted & brine peppers, frozen fruit & vegetables
2. Magnaterra Marinara -- tomato sauce	2. Vest Berries - strawberries	2. Milo's Whole Word --- new salad dressings, bruschettas and salsas
3. Deerview Farm -- relish	3. Cowdery Farm - peppers	3. Della Zona - salsa
4. Somerset Farmers Market members -- salsa	4. Kleinhens Farm – black turtle beans	4. Shagbark Seed and Mill – black bean brownies
5. Shepherd's Corner - pesto	5. Cherry Orchards - fruit	5. Goodness Bakes – fruit muffins
6. Bungtown Salsa – new pepper sauce	6. Green Edge Gardens - vegetables	6. Avalanche --- fruit breads, vegetable foccacia
7. Integration Acres – pickles, fermented foods	7. Shews Orchard - fruit	7. Patter Farms – pepper sauce
8. Malabar Farms – jam	8. Starline Organics - produce	8. Vino de Milo's - bruschetta
9. Blackstun Family Farm -- condiments	9. Shade River Organic -ptoduce	9. Dale's Creations
10. Tillis Highland Farm --- new pickle products	10. G. Campbell's Garlic Farm - garlic	10. Hometown Salsa - salsa
11. Starling Farms – fruit toppings		11. Frog Ranch Foods - salsa
12. Purely American -- jams		12. Bebo's Organics – frozen baby food (sweet corn & squash)
13. Herbal Sage Tea – berries tea		13. Mex City Salsa

Highlights for the 2010 season:

- Five processors started new product lines utilizing local produce ingredients
- One company (Casa Nueva) flash froze or brined 8 tons of produce and fruit
- 8 restaurants started to purchase from local farmers for the first time
- Local produce was purchased by Athens Kroger, Foodland, C & E Grocery and Seaman's Cardinal Market (Kroger had a farmers market end cap set up with both produce and value-added products)

Farmers growing vegetables or fruit have been the primary beneficiaries by either increasing the sales to processors, restaurants, grocers or institutions and/or by engaging in new product development at the Food Ventures Center. The names of the various farmers and processors were listed earlier in the report.

Secondarily market partners benefited with the promotion of branding initiatives at their stores, restaurants and farmers markets. More ACEnet Food We Love project participants also joined the Ohio Proud program. One of the project goals was to increase the specialty crop producers and processors to become Ohio Proud members (goal—10 to 15.) Over the 2010 grant period the following participated: Frog Ranch, Patter Farms, Milo's Whole World Gourmet, Hugus Fruit Farm, Integration Acres, Tillis Highland Farm, Shepherd's Corner, Hometown Spirit, Around the World Gourmet and DB Yummers are current clients utilizing Ohio Proud branding services. Now that Shade Winery has opened their retail operations in September they also plan to join. Staff has also provided Deer View Farm, Bebo's Organics, Shag Bark Seed and Mill and Magnaterra Marinara to join.

Lessons Learned:

Importance of Measurable Outcomes: We have created data tracking systems for individual farmers and processors and farmers utilizing our facility for some type of specialty crop processing. We also have developed new tracking systems in excel to record the increased access for specialty crops at restaurants, retailers and institutional buyers. This allows us to track over multiple years the effectiveness of the brand programs and has led us to launch a new collaborative brand program for restaurant buyers. We also continue to track such measurable outcomes as the number of farmers and food manufacturers utilizing specialty crop ingredients participating in trainings, tour and branding activities.

Benefits to Specialty Crop Industry for Replication: We feel the development of www.ohiofoodshed as an online community has promise and could be replicated by other regions. The on-going experience equipping and renovating of the Food Ventures Center as a processing facility adds to the knowledge base about local food infrastructure that promotes farm capacity will also be shared. Every month we see an increasing interest in these types of facilities and field many calls a month about our facility history, financing and operations. The Retail Ready curriculum development has provided an excellent partnership opportunity for OSU Extension, Ohio Proud, ODA and ACEnet to successfully prepare specialty crop farmers and processor to reach more wholesale market, such as restaurants, groceries, specialty retail and schools. We believe this curriculum could have national impact through webinars, online portals and regional training.

Contact:

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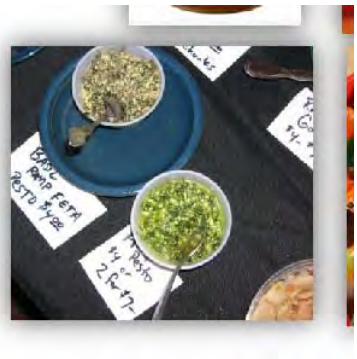
Additional Information:

Other photos of products, labels, ohiofoodshed and marketing materials.


Buy local
food first
VEST BERRIE
"The Berry Vest"
got berries?


bébo
organics
bébo
organics


Magnaterras
Marinara Sauce




MUSTARD
MUSTARD
MUSTARD
MUSTARD


All Natural
FROZEN SNACK
Paw Paw
POPS
STRAWBERRY
RASPBERRY


BLACK BEAN
CORN
MILD SALSA


Food We Love
Buy local food first
from the Ohio Hills


Food We Love is a regional brand program of the Appalachian Center for Economic Networks funded by the USDA Agricultural Marketing Services
Food We Love
Buy local food first
from the Ohio Hills

Project Title: Development of tiered produce marketing agreement for Ohio

Project Summary:

Purpose, Importance & Timeliness of the Project:

In recent years, large produce farmers in Ohio have been challenged to develop and meet food safety standard operating procedures required by their wholesale and retail customers. For many companies, this has resulted in the need to identify or employ full-time food safety quality assurance personnel to manage the diverse and sometimes conflicting requirements of several customers. The National Leafy Greens Marketing Agreement (NLGMA) initiative and FDA's Food Modernization Act will provide a more unified standard that is based on sound science and will simplify the efforts of large Ohio Growers. The Ohio Produce Marketing Agreement brings the added benefit of facilitating the efforts of small to medium sized Ohio produce growers to also receive food safety certification.

Project Approach:

Overview: The first year of the grant has been largely focused on four major areas:

- Listening sessions, interviews and resources gathering
- Infrastructure development, minor technical review board organization and fact finding
- Data gathering on diverse agricultural farming methods in Ohio
- Data gathering on certification tiers, standards and potential legal structure

Listening sessions, interviews and resources gathering. More than 15 listening sessions have taken place throughout Ohio, drawing more than 2,000 producers and other stakeholders. These sessions and the comments made provided the basis for a composite profile for Ohio's certification needs. This profile then provided the bedrock for discussions with others involved in other certification efforts and with those at state and private programs to help determine resource needs and availability for building a Marketing Agreement.

Infrastructure development, minor technical review board organization and fact finding. The composite profile developed as a result of the listening sessions also suggested a direction for the organizational structure for the Ohio marketing effort including the size and composition of the advisory board, and the various technical review boards. The various technical review boards were set up to address the needs of the varied cultural and farming environments found around the state. The composite profile also provided guidance for the type of certifying body and standards needed to protect the Ohio producers.

Data gathering on diverse agricultural farming methods in Ohio. The data from the listening sessions and interviews also highlighted areas where the composite profile was thin, requiring further research to facilitate the development of standards. Additional data was obtained largely from governmental and academic sources.

Data gathering on certification tiers, standards and potential legal structure. Finally, the validity of the composite data was check by taking back to the ag community from which it was drawn.

It was then used to assist in determining certification requirements in the form of tiers, standards and possible legal structures.

Goals & Outcomes Achieved:

The goals listed in the proposal were stated in qualitative terms and unfortunately were stated with more of a view to the end of what was expected to be a two to three year project rather than the first year end. In addition to the activities completed, described above, several web posting have been placed on the OPGMA website, including announcements for the listening sessions (http://www.opgma.org/listening), a discussion for the need for the Ohio based agreement (http://www.opgma.org/?q=why), an FAQ segment (http://www.opgma.org/?q=faq), and a resource listing (http://www.opgma.org/?q=node/34). Subsequent to these postings, a new website was established (http://www.opma.us). Announcements pointing readers to the OPGMA website were included in OPGMA E-News releases.

Preliminary work has been completed on three of the four standards (water quality, composting, and traceback) with the various technical review boards beginning work on the fourth standard (good handling practices) that are appropriate for specific culture, crop, or environment.

A three tier certification system was devised based on grower size and intended consumer.

- Tier I: Operators with direct farm sales, roadside farm markets, farmer's markets, CSA's, and other operators who do not wish to participate in the other tier levels but desire to demonstrate the Ohio food safety standard
- Tier 2: Operators with intra-state sales, designed for produce auction – type operations and produce handlers in general
- Tier 3: Operators at the inter-state and national level. GFSI audits offered in the third and subsequent years.

Beneficiaries:

The principal benefits for the Ohio specialty crop industry are in the future. However, a number of benefits are already being realized including the informing of stakeholders of the need for a food safety standard that is Ohio centric. Also the networking and galvanizing of the Ohio specialty crop industry; including a number of grower organizations, individual growers and handlers, Extension educators and researchers from The Ohio State University, and other stakeholders; to address Ohio's needs.

Lessons Learned:

There were a number of challenges, either expected or unexpected, that required the development of the marketing agreement to change plans, dates or the application of resources. While a strategic plan was developed, adjusted and approved by the OPMA Advisory Board, there were events that required reorganization of the initial proposed plan. One of the challenges was the intensity of the growing and harvest season which tapped the vitality of the volunteers until additional resources could be identified. Delays were experienced during the legal review of the marketing agreement. These delays were overcome.

Contact:
Stephen A. Carver, Ph.D.
scarver@ofa.org
614-884-1145

Project Title: OPGMA outreach for development of a state produce agreement

Project Summary:

Initial Purpose of the Project:
The goals of this proposal were to teach and encourage Ohio vegetable and fruit growers to implement practices in their operations that will minimize or eliminate their potential to source fresh produce-borne disease organisms and to help them maintain or increase their customer base as more and more retailers and food-service providers begin requiring food safety certifications and documentation of GMPs and GAPs.

Importance & Timeliness:
Up until the last several years, the public perception of fresh produce was that it was good, wholesome, and SAFE. Recent issues with *E. coli* infested spinach from California and *Salmonella sp* on peppers from Mexico have tarnished the perception that fresh produce is safe. While such occurrences are still rare, the increasing number of mega- fruit and vegetable farm and distribution operations and the public's increased interest in and awareness of health and wellness issues makes incidences of food-borne illness front page news. One of the significant repercussions of such mishaps is the collateral losses experienced by produce growers in other portions of the country where the problem is not found – including Ohio. The need for Ohio produce growers to become aware of and to implement food safety practices becomes ever more critical: so they do not become an unwitting source of fresh produce-borne pathogens, so that they can document their production and distribution practices when problems do occur, and so that they can meet the requirements of an increasing number of retail outlets and food service entities that are requiring such practices from their growers and suppliers.

How does project build on previous efforts?:
OPGMA submitted a SCBG proposal last year, "OPGMA Food Safety Training Program during the OPGMA Congress," that USDA funded through ODA. The 2008 SCPG supported the planning, development, promotion, and presentation of a half-day Food Safety program at the 2009 OPGMA Congress in January. The program was designed for growers whose experience in food safety issues ranged from "novice" to "intermediate." The program established the crucial nature of, the basic ABCs of (or GAP, GMP, HACCP, etc), and practical steps toward an effective food safety program in a grower's operation. Though not specifically part of the grant, the program provided the basis for a half-hour session on Food Safety presented during the OPGMA Summer Tour & Field Day (June, 2009) that was attended by a nearly 250 growers and other industry professionals.

The goal of the 2009 SCBG proposal was two-fold. The first was to build on the previous year's education program with another half-day effort at the 2010 OPGMA Congress aimed at providing the knowledge base and examples needed to facilitate growers' efforts in adopting

Good Agricultural Practices and Good Management Practices. The program was developed by Aaron Buurma, Buurma Farms Inc; Bob Jones, The Chef's Garden Inc; and Karl Kolb, High Sierra Group.

Project Approach:

- Hosting five educational sessions (5.75 hours total) at the 2010 OPGMA Congress. Total attendance was almost 300.
- Almost 200 individuals attended the 2010 OPGMA Summer Tour & Field Day event during which they heard a synopsis of food safety issues.
- A food safety articles, written by Dr. Karl Kolb, has been published in both the Winter and Spring issues of the *OPGMA Today* newsletter. At least one food safety related article is planned for each issue of the newsletter for the foreseeable future.
- A significant portion of the OPGMA website (http://www.opgma.org/) has been devoted to food safety and the Ohio Fresh Produce Marketing Agreement. The website includes coverage of the grower listening sessions, a justification of the effort and its significance for the Ohio produce industry, a Q&A section, and suggestions for industry involvement.
- There were not problems or delays in implementing the planned efforts supported by this grant.

Goals & Outcomes Achieved:

The answer below answers both questions in this section.

The online surveys conducted following the 2010 OPGMA Congress did not shed light of the effectiveness of the food safety sessions nor on whether attendees left the conference with a better understanding of food safety issues. However (in response to the question above), the session/speaker evaluations turned in at the conclusion of each of the food safety sessions did. I've attached a pdf which includes the evaluations for the five food safety sessions offered during the conference. In addition, I've included session descriptions (in green below) to help put the evaluations in context. In short, the evaluations show that those of the more than 300 in total attendance who responded felt that the sessions and speakers were very good (the one session with scores >= 5 out of 7) or outstanding (the other four sessions with scores >= 6 out of 7).

2010 OPGMA Congress at the Kalahari in Sandusky OH
Food Safety Perspective: An Exchange with FDA and OPGMA

Date: Tuesday, January 19, Start: 10:45 AM End: 12:00 PM Session: 22112
Speaker(s): Karl Kolb, Ph.D., Bob Jones Jr, Samir Assar
Session Description:
Food safety lapses have already had a significant impact on our industry. Guidelines and agreements that have roots in these episodes will begin to affect the way and with whom you do business. Listen and gain an understanding of FDA's role in food safety and its interaction with the influences and market forces that are driving the adoption of food safety practices. Share your thoughts, questions, and recommendations as OPGMA and partners work to promote food safety and establish an Ohio grower-friendly alternative to the proposed national agreement.

Speakers
Samir Assar
FDA/Center for Safety and Applied Nutrition
College Park, MD College Park
Bob Jones Jr
The Chef's Garden Inc
Huron, OH 44839
Karl Kolb, Ph.D.
Project Leader
Chippewa Falls, WI 54729

OFPMA: Ohio Fresh Produce Marketing Agreement

Date: Wednesday, January Start: 8:00 AM End: 9:30 AM Session: 23111
Speaker(s): Karl Kolb, Ph.D., Bob Jones Jr, Mike Taylor
Session Description
The Ohio Fresh Produce Marketing Agreement (OFPMA), supported by a Specialty Crop Block Grant from USDA and administered by ODA, is an alternative to the one-size-fits-all national Leafy Greens Agreement that is currently being considered by USDA. This session will contrast the differences in the development and implementation of these alternative food safety programs. It will also highlight why the flexible standard created by the OSCPP is critical for the continued survival and growth of the Ohio produce industry.

Speakers
Mike Taylor
U.S. Food & Drug Administration
Bob Jones Jr
The Chef's Garden Inc
Huron, OH 44839
Karl Kolb, Ph.D.
Project Leader
Chippewa Falls, WI 54729

OFPMA: Food Safety Standards Part 1

Date: Wednesday, January Start: 12:30 PM End: 1:30 PM Session: 23211
Speaker(s): Karl Kolb, Ph.D., Bob Jones Jr
Session Description:
This session will focus on a discussion of three central standards for the Ohio Fresh Produce Marketing Agreement: water, composting, and traceability.

Speakers
Bob Jones Jr
The Chef's Garden Inc
Huron, OH 44839
Karl Kolb, Ph.D.

Project Leader
Chippewa Falls, WI 54729

OFPMA: Food Safety Standards Part 2

Date: Wednesday, January Start: 1:45 PM End: 2:45 PM Session: 23212
Speaker(s): Karl Kolb, Ph.D.
Session Description
A core food safety component of any marketing agreement is Good Hygiene Practices (GHPs).
Ohio's muck, Amish, and other production areas present daunting challenges to any one-size-fits-all
standard found in the proposed National Standard. Karl and a panel of growers from these unique
production areas will lead a discussion of the sound science for and development of realistic GHPs.

Speaker
Karl Kolb, Ph.D.
Project Leader
Chippewa Falls, WI 54729

GPS/RFID Solutions for Produce Traceability

Date: Wednesday, January Start: 12:30 PM End: 1:30 PM Session: 43211
Speaker(s): W Dennis Burnside
Session Description:
There are presently no technical solutions that provide a cost-effective traceability solution at the
producer level. A partnership has been organized to solve this shortcoming by working directly with
Ohio producers. Learn about this international high-tech partnership as well as how it will create
novel, low-cost, scalable, producer-level traceability solutions using the very latest in technological
breakthroughs, including GPS, RFID, and Wi-Fi.

Speaker
W Dennis Burnside
The Ohio State University, ElectroScience Lab
Columbus, OH 43212

The goals listed in the proposal were stated in qualitative rather than quantitative terms. We stated, “In 2009, OPGMA drew over 800 total attendees to the OPGMA Congress and nearly 250 to the OPGMA Summer Tour & Field Day, providing the opportunity to learn of the nuts and bolts of food safety. When added to the circulation of the *OPGMA Today* newsletter, and the OPGMA e-News, the realistic expectation is food safety outreach efforts that would be supported by this proposal could reach the majority of produce growers around the state. The message and “how to’s” supplied will strengthen and expand on efforts being made by OSU Extension.

As stated above, we reached almost 300 industry stakeholders during the 2010 OPGMA Congress who specifically attended food safety sessions, another 200 during the 2010 OPGMA Summer Tour & Field Day, plus our 400 member stakeholders through our printed *OPGMA Today* newsletter and e-newsletters. Though we don't have a record of webpage hits (www.opgma.org), we also were visited by a least some member and nonmember stakeholders.

Beneficiaries:
The beneficiaries of this effort were Ohio growers and other industry stakeholders. Again, the measure of the immediate benefits of the effort were qualitative (an understanding of the food safety issues, the potential economic implications, and a basic understanding of the measures required to meet food safety standards.) rather than quantitative that could be measure in produce sales.

Lessons Learned:
While we met our goal, we admittedly did not draw as many attendees to the food safety sessions as we would have preferred. As with many other efforts that would require a change in perspective, strategy, and/or protocol, some individuals and operations are resistant, or at least hesitant until they fully understand the need and the potential benefit of participating. It is OPGMA's continuing mission to help our stakeholders understand the significance of food safety to our industry and food safety certification to their individual operations.

Growers, like many other people, are motivated to action by threat of the imminent. Large and some medium sized Ohio growers are already grappling with food safety and certification issues that is required of them by retail customers of all sorts that they sell to. Most smaller growers, who have little time and few dollar resources to it or sell to outlets that don't yet require certification, though need continual message reinforcement and guidance on the path to food safety certification.

Contact:
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scarver@ofa.org
614-884-1145

2011 Currants, Gooseberries and Jostaberry Field Trial

Dr. Gary Gao, Small Fruit Extension Specialist and Associate Professor
Al Welch, Thom Harker, and Lynn Miller, Research Assistants
Wayne Lewis, Farm Manager
The Ohio State University South Centers
1864 Shyville Rd, Piketon, Ohio 45661-9749
Phone: (740)289-2071

INTRODUCTION:

Currants and gooseberries can be grown in Ohio as a cash crop. A research project on marketing and production of *Ribes*, which includes currants, gooseberries and Jostaberries, was initiated in late 2009. This project was funded by a Specialty Crop Block Grant from the US Department of Agriculture through the Ohio Department of Agriculture. A cultivar trial of currants, gooseberries and jostaberries was established in 2010 at OSU South Centers in Piketon, Ohio.

METHODS:

We put together a list of currants and gooseberries to be evaluated under Ohio growing conditions in December 2009 and January 2010. The black currant cultivars selected for this trial need to be White Pine blister rust resistant due to existing laws in Ohio. Only certain black currant cultivars are approved to be shipped into Ohio. The Ohio Department of Agriculture has a list of acceptable cultivars of black currants for Ohio plantings. They are Consort, Coronet, Crusader, Titania, Lowes Auslese, Polar and Willoughby. Ohio has no legal restriction on white or red currants or gooseberries. We compiled a list of suitable *Ribes* cultivars to be planted at the OSU South Centers Research and Extension facility in Piketon and several collaborators' farms in Ohio.

Nineteen cultivars were selected to be trialed. Among them were three black currants, two white currants, three red currants, ten gooseberries and one jostaberry (crosses between black currants and gooseberries). With the high demand for some of the cultivars, we were unable to secure all the plant materials needed for the study. Thirteen cultivars were planted in 2010 and the remaining six were planted spring 2011.

With the wet spring experienced in 2010, ground preparation and planting were delayed until early June. The trial site was worked and prepared for planting. Rows were marked out on ten-foot centers. Compost was applied to add organic matter. The compost was applied at a rate of 21.8 cubic feet per bed using a mulch wagon prior to constructing raised beds. Raised beds were then constructed using a Reddick mulch layer, to create a raised planting surface. Irrigation lines were then laid out on top of the raised beds along the plants. Sod was established between the rows to assist in weed control and reduce soil erosion. All of the plants were hand planted on June 18th 2010 and the following year on May 31st 2011.

Twenty-five pounds of 19-19-19 were applied as a broadcast per acre in May, 2010 and 2011. Fungicide and insecticide was applied on a 10-day schedule. We harvested a small crop of currants and gooseberries in June, 2011.

RESULTS:

Since it typically takes *Ribes* three years to produce a significant amount of fruit, we only had a small crop in 2011 from our research plot. Here is a summary of our results from 2011. We are anticipating a much bigger harvest in 2012. It is important to note that yield differences are attributed to different cultivars and the year of planting.

Table 1: Yields and Fruit Quality of Currants

Cultivar	Pounds per Acre	Average Fruit Wt. (grams)	Soluble Solids (Brix)
Consort	2924	2.16	13.1
Titania	1743	.82	9.3
Crusader	1524	.79	7.6
Primus	276	.18	5.5
Red Lake	32	.19	3.5
Jon Vantets	19	.18	2.5
LSD	**353**	**1.6**	**3.8**

Table 2: Yields and Fruit Quality of Gooseberries

Cultivar	Pounds per Acre	Average Fruit Wt. (grams)	Soluble Solids (Brix)
Red George	1390	1.88	5
Pixwell	315	1.58	5.7
Captivator	204	1.89	3.9
Hinnomaki Red	185	1.45	7.2
Invicta	50	2.23	5.2
Poorman	4	.91	2.5
LSD	**353**	**1.6**	**3.8**

Gooseberries

Black Currants

Table 3: Cultivars of Currants, Gooseberries and Jostaberry Planted at OSU South Centers in Piketon, Ohio.

Cultivar	Type	Color	Planting Year
Consort	Currant	Black	2010
Crusader	Currant	Black	2010
Titania	Currant	Blank	2010
Primus	Currant	White	2010
Blanca	Currant	White	2011
Red Lake	Currant	Red	2010
Rovada	Currant	Red	2011
Jon Vantets	Currant	Red	2010
Captivator	Gooseberry	Pink	2010
Hinnomaki Red	Gooseberry	Red	2010
Jahns Prairie	Gooseberry	Red	2011
Invicta	Gooseberry	Pink	2010
Poorman	Gooseberry	Red	2010
Red George	Gooseberry	Dark Red	2010
Black Velvet	Gooseberry	Dark Red	2011
Pixwell	Gooseberry	Pink	2010
Tixa	Gooseberry	Red	2011
Jewel	Gooseberry	Peach	2011
Josta	Jostaberry	Black	2010

DISCUSSIONS:

We noticed that some of our plants had suffered water stress since they were planted in full sun. Gooseberries may do better in a northern exposure since they prefer cooler root and air temperatures. It is possible that shading during July and August might have helped our plants. More research is needed to determine if and how much shading is needed.

We also noticed some leaf spot diseases and fall web worm on some cultivars. A more detailed record will be taken in 2012.

ACKNOLEGEMENTS:

We extend our sincere appreciation to the Ohio Department of Agriculture and USDA (US Department of Agriculture) for a Specialty Crop Block Grant to work on *Ribes* in Ohio. We also thank Dr. Maurus Brown, former small fruit extension specialist and associate professor of OSU South Centers, for applying and securing a specialty crop block grant that funded this project. We thank Julie Strawser-Moose for her editorial help, graphic design and web page development.

For more information, please log on to OSU South Centers' Horticulture page at http://southcenters.osu.edu/horticulture/fruits/currants-and-gooseberries/

Forward

This document is intended to provide general guidance to individuals who want to grow, in urban community or demonstration gardens, fresh produce for personal consumption or for sale at farmer's markets, road-side stands, or similar outlets.

Introduction and Best Practices

The potential food safety risks associated with fresh garden produce are real and must be addressed. Fruits and vegetables contaminated with human pathogens can result in foodborne illness and even death. Unfortunately, washing contaminated produce does not eliminate pathogens. Therefore, responsible produce growers and handlers must become knowledgeable of best practices to minimize the likelihood of pathogen introduction at any point from the garden to the table. The good agricultural practices (GAPs) and good handling practices (GHPs) discussed in this document address preparing the garden, planting the seeds, cultivating and harvesting the produce, as well as cooling, storing, transporting, and displaying fresh produce for sale in a manner emphasizing food safety and minimizing risk.

Fruits and vegetables are important sources of essential nutrients and other health-promoting components shown to reduce the risks of heart disease and certain cancers. Health professionals encourage Americans to consume at least five servings per day as part of a healthy, well-balanced diet. Despite the health benefits from eating fresh produce, however, raw fruits and vegetables have been associated with outbreaks of disease. Illnesses caused by human pathogens, including bacteria, viruses, and parasites, can result from the consumption of contaminated produce. Pathogenic microorganisms, including *Salmonella*, *E. coli* O157:H7, *Cryptosporidium*, and norovirus, have all been identified in outbreaks of human illnesses associated with consumption of contaminated produce. Potential sources in the garden include:

- ✓ Manure
- ✓ Water & ice
- ✓ People
- ✓ Soil
- ✓ Animals & birds
- ✓ Equipment, containers & utensils

As a result, many food retailers require commercial produce growers to have independent third-party inspections of farms to certify that fruits and vegetables are grown, harvested, and packaged properly, according to GAPs and GHPs, as a condition of doing business. Knowledgeable gardeners who implement best practices will minimize contamination risk and enhance food safety.

Best Practices for Safe Fresh Garden Produce

The guide presents the "best practices," including GAPs and GHPs, that will minimize risks of microbial contamination of fruits and vegetables from garden to table.

- ✓ Before planting
- ✓ During production
- ✓ At harvest
- ✓ During post-harvest handling

Before Planting

The process of producing safe fresh fruits and vegetables, starts before the first seed is planted. Growers must decide on the location of the garden site, the source and method of application of irrigation water, and whether to use manure-based compost or fertilizer. In addition, growers should complete gardening and food safety training and have the soil and water tested for contaminants.

Garden Site Selection

- Select the site of your garden giving consideration to the location, prior use of the property, and the current use of adjacent properties.
- Test the soil for contaminants such as chemicals, pesticides, and heavy metals, including lead, especially if located near high-traffic zones. Maintain the test results.
- Locate gardens away from potential contamination sources, such as garbage, utilities, animals, water runoff, flooding, and septic systems.
- Create reasonable barriers, such as fencing around or cages over produce, to restrict access of people and exclude animals from the garden.
- Consider purchasing soil that has been commercially packaged and labeled for growing food crops to ensure quality and traceability.
- Select non-toxic, non-leaching materials for raised beds, containers, stakes and trellises. Do not use pressure-treated wood, used tires, singe use plastics, or old railroad ties.
- Restrict human access to gardeners; exclude feral animals and pets; limit birds as much as possible.

Water Source and Application Method

- Consider the water source. Municipal water and potable well water have the lowest risk.
- If rain water will be collected in containers, clean and sanitize the containers prior to water collection. Once collected, treat the water prior to use in the garden.
- Test the water for contaminants, such as fecal coliforms. Maintain the test results.
- Consider using drip irrigation rather than overhead application. Wetting the soil rather than the plant directly minimizes the risk of contamination with human and plant pathogens.
- If water must be transported to the garden site, use cleaned and sanitized containers made of food grade materials.

Compost and Manure Use

Livestock manure can be a valuable source of nutrients; however, it is primarily composed of feces and may contain pathogens that can contaminate the produce and cause disease. Furthermore, composting is a complex process that requires strict attention to specific procedures and conditions. Therefore, consider purchasing traceable, commercially-prepared compost, if manure-based compost is desired.

- Do not use raw manure; actively compost manure, optimizing temperature, turning, and time to produce high quality compost. Incorporate it into the soil prior to planting; do not top-dress or side-dress plants.
- Wear gloves when handling compost material.
- Locate the compost pile in a secure location as far from the garden as practical. If possible, erect physical barriers to prevent runoff and wind drift of manure and restrict animal access.

Training and Record-Keeping

- Ensure all growers and volunteers receive basic food and gardening safety training.
- Organize records and operational documents, including soil and water test results, information on chemicals, training certificates, and GAPs-GHPs.

During Production

Proper Hand-washing

People are a significant source of pathogens that may be transferred to fruits and vegetables, particularly by contaminated hands. Frequent, proper hand-washing is an effective strategy for preventing foodborne illness.

- Individuals must wash hands before touching produce, after using the bathroom, after handling compost or soil, and before and after eating or smoking, at a minimum.
- Wet hands with clean, warm potable water; apply liquid soap; rub hands to create a lather for at least 20 seconds; clean under nails and between fingers.
- Rinse under clean, running water and dry hands with a single-use towel.

Personnel Health

- Do not permit individuals to work in the garden or come in direct with the produce while sick, or until 24 hours after symptoms, such as vomiting and diarrhea, have subsided.
- Do not permit individuals with broken, inflamed skin, including cuts, blisters, to come in direct contact with the produce without gloves.

Fertilizer and Pesticide Use

- If fertilizers and/or pesticides will be used, follow the manufacturer's instructions.
- Dispose of chemicals and their containers according to the manufacturer's instructions.

At Harvest

Harvest the garden regularly and remove any rotten produce. As previously discussed, always use proper hand-washing procedures and allow only healthy individuals to harvest produce.

Cleaning and Sanitizing

Cleaning refers to washing and rinsing to remove visible dirt and other organic matter from surfaces. Sanitizing refers to treating to kill pathogens. Sanitizers are not effective when surfaces are unclean.

- Clean and sanitize containers and lids that will hold harvested produce. Containers should be made of food grade materials; do not use garbage bags, garbage cans, and any container that originally held chemicals since not intended for food use.
- Clean harvest tools, such as knives, scissors, with soap and potable water and sanitize immediately before and after each gardening session.

During Post-harvest Handling

Once out of the garden, it is easier to think of produce as food. After harvest, use refrigeration to cool the produce and slow the growth of microorganisms that may be present. Only clean vehicles should be used to transport fresh produce.

Proper Hand-washing and Personnel Health

- Food handlers must be healthy, have properly cleaned hands, and wear clean clothes.

Cold storage

- Keep produce cool; if ice is used, make sure that it is made from potable water.

Transportation and distribution

- Do not use vehicles that have carried animals previously.

Storage, Retail or Food Preparation

- Clean and sanitize all utensils and food contact surfaces.

Endnote

According to the US Food and Drug Administration, diluted unscented liquid chlorine bleach can be used to sanitize containers and surfaces. To prepare a sanitizing solution from bleach, add one tablespoon of bleach for every one gallon of drinking water.

Acknowledgements

The content within was adapted from two publications: "Food Safety Begins on the Farm: A Grower's Guide," Cornell University (2000) and "Food Safety Tips for School Gardens," USDA Food and Nutrition Service (2009), available online. The document URLs are: www.gaps.cornell.edu/Educationalmaterials/Samples/FSBFEngMED.pdf and www.fns.usda.gov/cnd/Guidance/foodsafety_schoolgardens.pdf, respectively.

Vertical Growing Systems: Directions for Disassembly and Storage

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Items needed

- **Hand-pruners:** to remove the bulk of the plants from the pots prior to tear-down.
- **Hand-cultivator:** to separate the roots from the potting medium, if the medium will be reused next season.
- **Plastic tub(s):** to store potting medium until next season. The number of tubs needed depends on the amount of medium. One 28-gallon tub will hold medium from approximately 4-5 vertical units (equal to 16-20 pots). Use of larger tubs is discouraged due to the weight of the medium when moving the filled tubs.
- **Yard waste or trash bags:** to collect plants, vines, and root systems for disposal.
- **Water supply:** to rinse parts, preferably with hose and nozzle to permit spraying.
- **Boxes:** to store pots and other vertical system parts. Use of cable or twist ties will help to bundle and secure top tubes.
- **Permanent marker:** to label top tube ends to achieve proper orientation of tubes in reassembled system next season.
- **Storage location:** to assure secure, dry storage of systems and related supplies.

Recommended Procedures for Disassembly of System

<u>Top Tube, Timer and Pump Removal</u>

1) Prior to removing top tube(s), use a marker to label ends. If your system has multiple rows, label tubes to identify row since tubes are not of equal length.

2) Remove top tube(s) from pole(s). Rinse and roll up each tube using care to avoid kinks that could restrict water flow during future use. Keep emitter tubes in place in top tubes. Use ties to secure bundled tubes during storage.

3) Remove batteries from timers prior to storage.

4) Disconnect pumps from water barrels, wipe down, and set aside.

5) Empty water barrels and carefully rinse repeatedly to ensure removal of nutrients and sediment which can grow during storage if not removed.

<u>Plant Removal & System Disassembly</u>

6) Use pruners to avoid damage to pots. Remove all plant material and as much of roots as possible while system is still assembled.

7) If stakes were used, remove stake from pots, rinse stakes, and allow to dry.

8) One by one, starting at the top, remove pots. Collect swivel plates, tees, and pot spacers, rinse, and allow to dry.

9) Remove poles, rinse, and allow to dry.

10) If black plastic ground cover, will be replaced for next season, remove and discard. Alternatively, cover may be removed and stored for reuse.

Root Removal & Potting Medium Storage

11) Remove potting medium from pots. If desired, use cultivator to separate roots from medium as well as possible and discard roots. Often, you will need to dump medium from pot, break up clumps, and comb through. If medium is trapped within root system, discard entire mass.

12) Allow medium to dry out thoroughly before storing to prevent mold growth.

13) Once potting medium has been removed from pots, rinse pots and allow to dry.

Storage

14) Place all dry parts in a box for storage.

15) Move boxes with parts, tubs or bags with medium, pumps, water barrels, remaining nutrients, and any other supplies to storage facility and secure.

Additional Items for Larger Vertical Growing Systems

16) To prevent freezing and bursting, blow out remaining water from pipes, in a manner similar to that used with traditional irrigation systems.

17) Cover “T’s” with plastic trash bags and secure tightly to prevent damage from weather.

Helpful Tips

Take photographs. To facilitate reassembly next season, take photos of setup. Pay special attention to tube and timer connections and configuration of pots and emitters.

Take an inventory. To simplify planning, itemize parts and supplies while packing for winter storage. The list will help you with budgeting and ordering for next season.

Resources. Next year, each organization will be responsible for obtaining its own plants and supplies. We will continue to provide guidance and will host a discussion meeting this winter!

News Release

Center for Innovative Food Technology

5555 Airport Hwy., Ste. 100 • Toledo, OH 43615-7320 • 877-668-3472 or 419-535-6000

FOR IMMEDIATE RELEASE
Tuesday, Aug. 7, 2012

Contact: Jim Konecny
Office: 419-535-6000, ext. 108
Cell: 419-704-5968

Learn how to grow food in urban areas safely

TOLEDO, Ohio – Nearly everyone loves fresh, local produce – and when produce is cared for safely and properly, sales and customer satisfaction rises. As the harvest season is in full swing, a training workshop will be offered for community gardeners, urban growers and anyone involved in farmers' markets to learn the fundamentals of proper food handling and good agricultural practices.

Food safety expert Shari Plimpton, Ph.D., director, industry outreach, Center for Innovative Food Technology (CIFT), will discuss "Growing Food in Urban Areas Safely," Tuesday, Aug. 21, 2012 from 10 – 11:30 a.m. (registration at 9:45 a.m.) at Antioch University Midwest, 900 Dayton St., Yellow Springs, Ohio 45387.

The knowledge gained from this session is especially important if there is an interest in selling produce to outlets. Participants will learn proper sanitation and hygiene procedures for safe, high-quality produce. In addition, information will be available on urban agricultural efforts in Ohio.

Best of all, guests can attend free. Training is sponsored by CIFT, Tecumseh Land Trust, Antioch University Midwest, and Ohio Manufacturing Extension Partnership. Register by contacting 419-535-6000, ext. 140 or rsvp@ciftinnovation.org.

About the Center for Innovative Food Technology

The Center for Innovative Food Technology is a developer and provider of technical innovations and solutions for the food processing, agribusiness and agricultural sectors of the economy in our region, our state and beyond. These innovations and solutions are developed in order to enhance the economic performance of the food processing and agricultural sectors. More information is available at ***www.ciftinnovation.org****.*

###

THE SEL PROJECT

2011-2012 SCHOOL YEAR
FARM TO SCHOOL OUTCOMES

November 2012

CUYAHOGA COUNTY
BOARD OF HEALTH

In December 2011, the South Euclid Lyndhurst School District became the first district in the State of Ohio to have a Board Approved Wellness Policy containing farm to school language.

Introduction

Recognizing that we are facing the first generation of children expected to live shorter lives than their parents, the Cuyahoga County Board of Health (CCBH) has committed to creating programs that support healthy choices for our County's youth. Since 2009, the CCBH has been a regional leader in bringing the nationally recognized Farm to School program to Northeast Ohio as an innovative strategy to address childhood obesity.

The SEL (Students Eating Locally) Project has been the result of the CCBH, the South Euclid Lyndhurst School District (SELSD), Red Basket Farm and AVI Fresh committing to make the healthy choice the easy choice for students since 2010.

This report is made possible by the support of the Ohio Department of Health, Bureau of Child and Family Services, Child and Family Health Services Childhood Obesity Reduction Initiative.

Local Produce Offerings

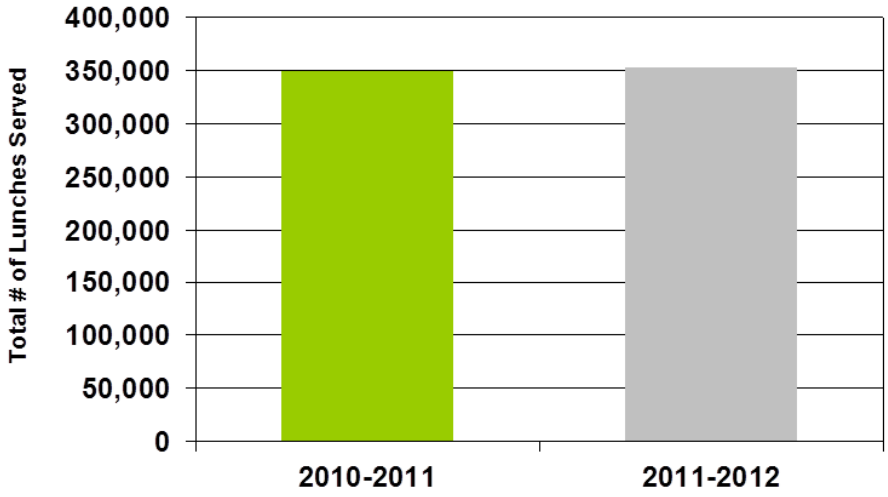
The SELSD foodservice program increased the number of fresh produce offerings from Red Basket Farm by **16 items** from year one to year two.

2010-2011 Local Food Purchases/Offerings

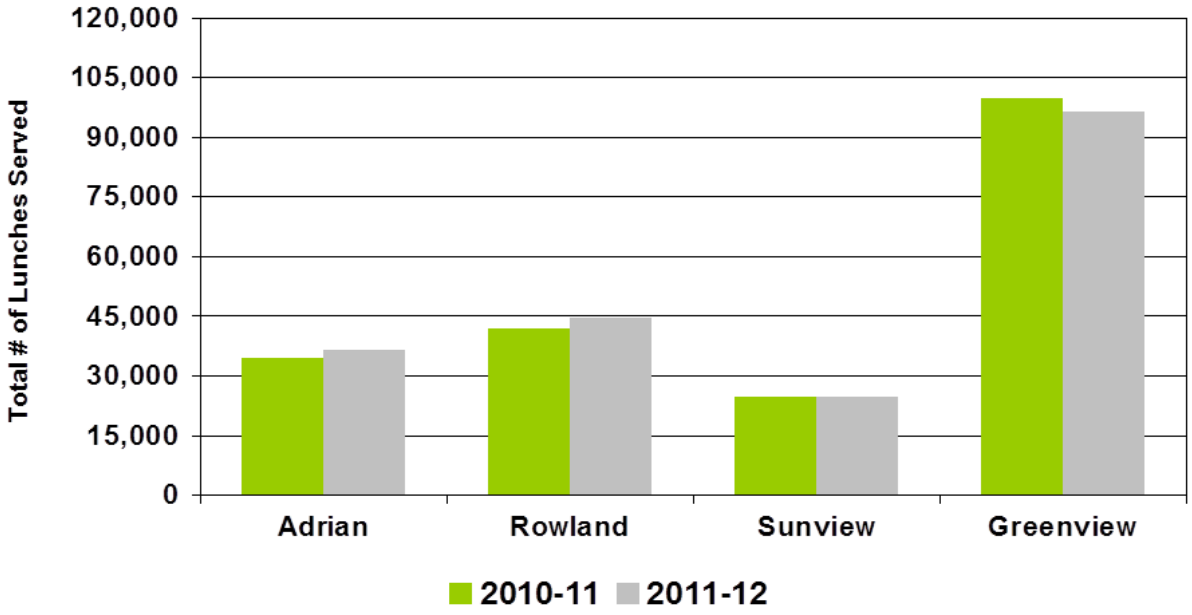
2011-2012 Local Food Purchases/Offerings

Lunch Participation

District lunch participation has been positively impacted by the implementation of the farm to school program.

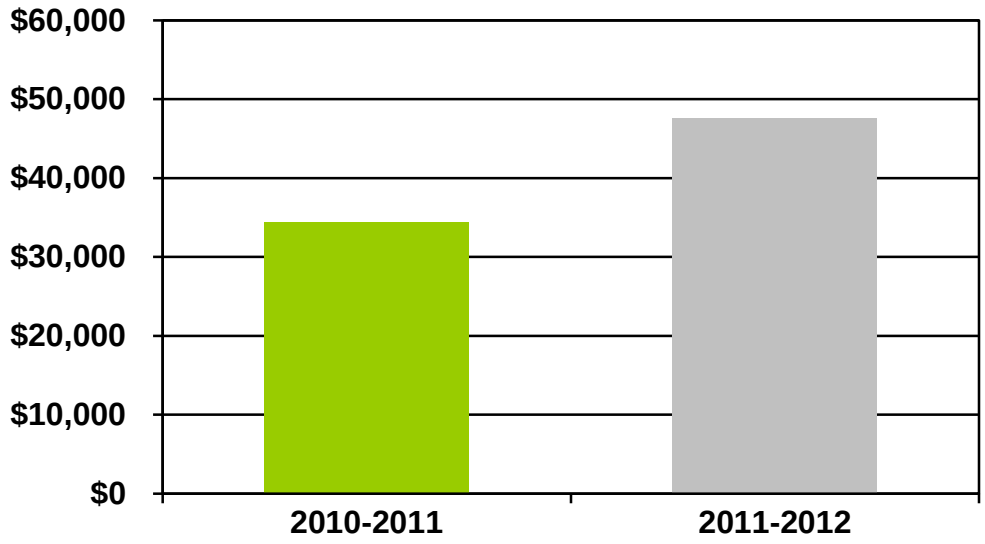


More specifically, grades K-6 have experienced a 5% increase in school lunch participation since 2010.

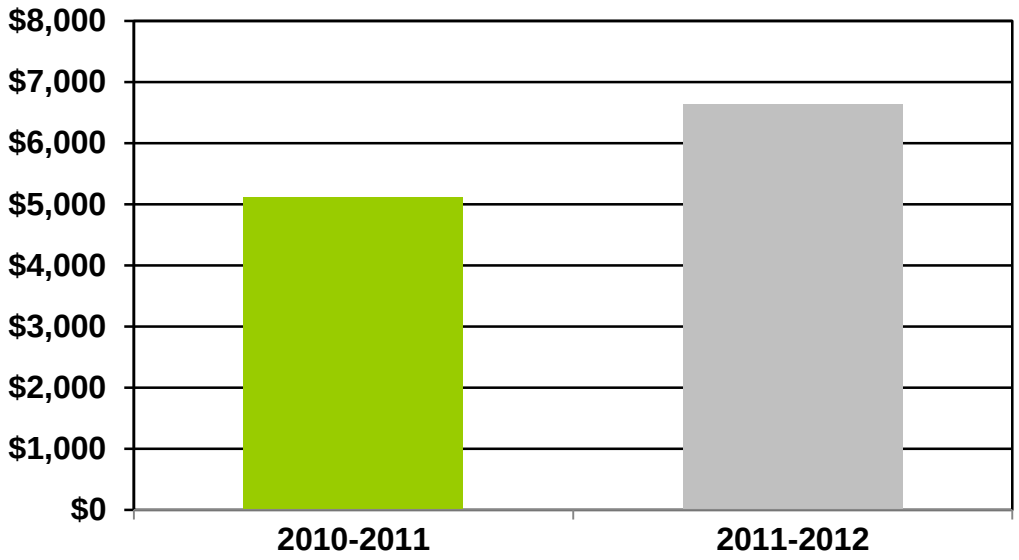


Produce Procurement

The district experienced a 38% increase in produce spending with their distributor during the 2011-2012 school year. This increase is due to the changes in the price of produce, an increase in the number of meals served, and the district's commitment to offering more fresh fruits and vegetables.

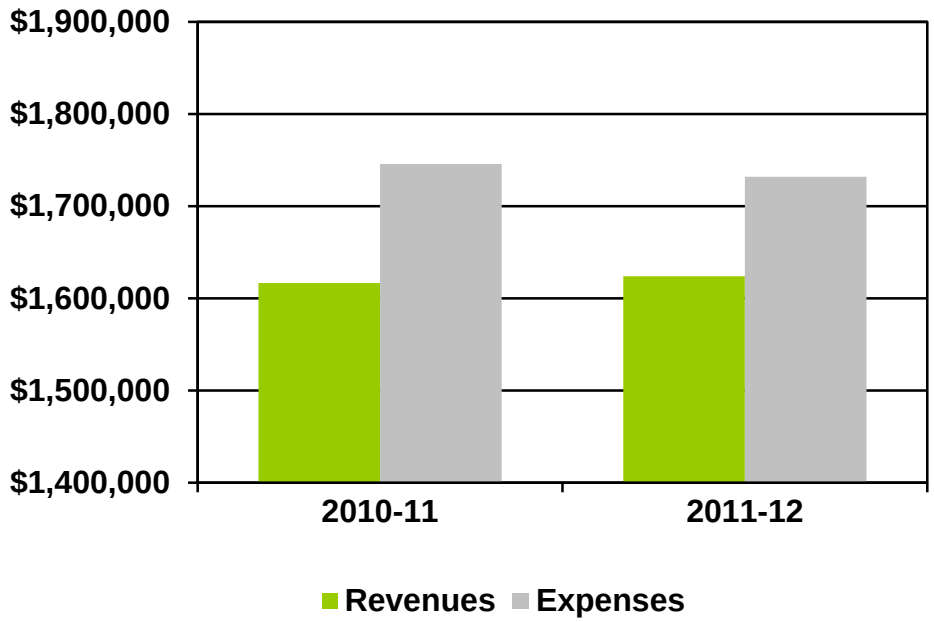


The SELSD meal program grew their investment in the Ohio economy during the 2011-2012 school year. Spending with Red Basket Farm increased by **nearly 30%** from year one to year two. Produce prices at the farm have remained unchanged since 2010.

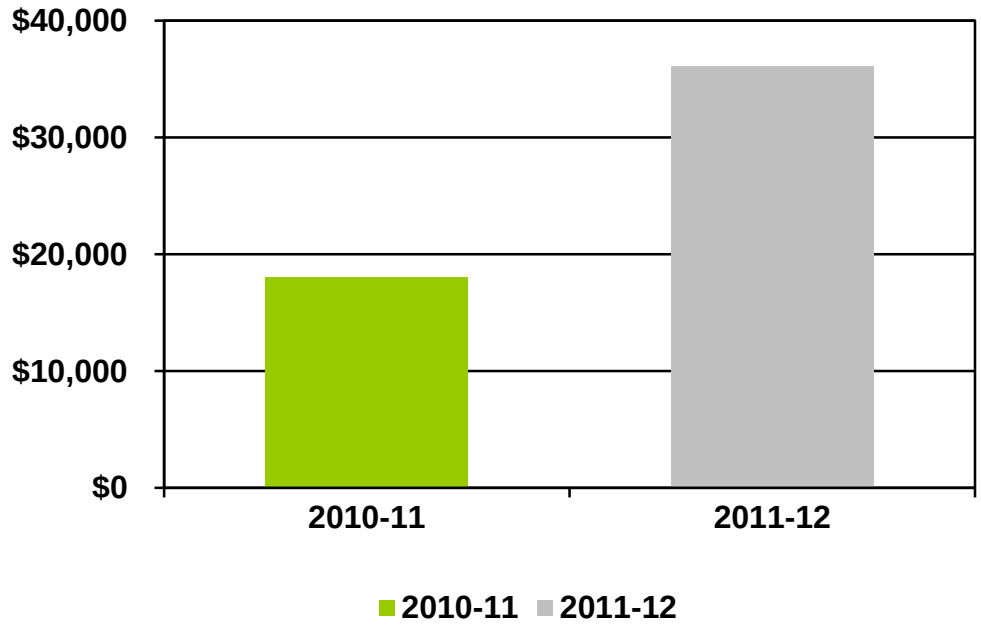


Financial Impacts

The SELSD has **increased revenue** and **decreased the total amount lost by the school meal program by 16%** in two years through the establishment of farm to school and other district wellness initiatives.



The SELSD **doubled** the amount of funding opportunities they received from year one to year two to support expansion of the farm to school program.



Experiential Learning Opportunities

Through the hard work and dedication of Adam Swirsky (Brush High School), Mardea Hunt (Greenview Upper Elementary School), and Angie Janson (Parent), three school gardens were established and 63 students participated in the Veggie U Earth to Table Curriculum during the 2011-2012 school year.

Cuyahoga County Board of Health

Alison Patrick, MPH, RD, LD
Program Manager

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CUYAHOGA COUNTY
BOARD OF HEALTH

Please review each topic below and select the FIVE that would be of most interest to you and the decision makers at your winery

Topics: please choose no more than 5 and fax back your choices to 440-466-4427 or e mail them to dwinchell@OhioWines.org. We'll select the topics for each regional meeting based on your feedback.

1. **Motorcoach and group sales**. Changes are afoot in the motorcoach business. Seniors are aging, gambling trips are dominating catalogues, boomers will not be herded in busses. Adventure travel is in, culinary travel is in, spoke and hub trips are popular. An expert in the business will be identified to help those interested in tapping into this changing but lucrative market.
2. **Putting the Customer first:.** Consumers have limited dollars and lots of choices. Negative 'word of mouth' experiences spread at the speed of light via text messages, blog comments and critical postings on YELP can quickly undermine a successful business. Exceptional customer service must become the new norm for you and your front line employees.
3. **Social networking as a business development tool:** Blogging, Facebook, Twitter and more: a basic introduction for the novice.
4. **How to develop a sponsorship program:** Generating cash flow from outside partners is not as easy as it sounds – but can contribute significantly to your bottom line.
5. **A Q and A session** with state and federal regulators [ask the TTB and ODLC]: we'll invite TTB and ODLC to send a representative for a question and answer session.
6. **Grant writing and opportunities:** Thousands of grants are available, but your needs must match the goals of the funding agency. Tips to writing a successful grant.
7. **Coop advertising:** With dollars ever more scarce, and the traveling public looking for a 'one stop shop' as they make plans to visit a region, how to create a successful plan with other partners.
8. **Traditional advertising:** print, network TV, cable TV, radio: how to use traditional avenues effectively and economically, to build your brand and grow your business
9. **Non traditional advertising vehicles:** Blogs: A powerful blogger can help build your brand> You can create your own powerful blog on a budget
10. **Working with your local tourism bureau:** They drive visitation, they have influence, they have substantial budgets – they need the wine industry to hook a desirable demographic. How to create win-win situations
11. **Working with bloggers, free lance writers and traditional journalists:** These folks need help: they have deadlines and must have quality material to maintain their livelihoods. How we can help them and help ourselves at the same time
12. **Working with the Farm Bureau:** Ohio's most powerful agricultural voice can provide considerable assistance to our industry.
13. **Identifying and building on trends:** identifying what is 'warm' before 'it' gets 'hot' – then take first advantage of the opportunities presented.
14. **Culinary tourism:** foodies travel, have great disposable income. How to attract them.
15. **Marketing to millennials and gen Xers:** How to create programs to attract this very desirable demographic group.

16. **Locavores:** creating and building upon the eat and drink local trend. Cleveland's Year of Local Food and how to build on it.
17. **Farm Market sales:** are they for you?
18. **Marketing to boomers:** Most disposable income will continue to reside in this group. Learn how to tap into this group.
19. **Special events** as a foundation for marketing strategies: an event or special promotion needs to be much more than a sunny afternoon in wine country. See how to turn it into a powerful marketing tool whose impact reaches far beyond the event itself
20. **Insurance issues:** protecting your winery against loss and disaster.
21. **Strategic planning for your business**: where do you want to be in 3 years? 5 years? 10 years? Steps to plan for future success
22. **Legal issues facing wineries [by law professionals]** – Items to consider and situations where you need to consult legal assistance.
23. **On line learning opportunities: KSU's VESTA Program** – an on-line viticulture and enology certificate – or associate degree – on line via the Kent State program offerings.
24. **Crisis management plans:** is your business and your management team ready to handle a disaster [a fire, a drunk driving accident, the death of a business principle?] Ideas to consider
25. **Package design:** labels, bottles, closures: what is new in packaging?
26. **Getting the most out of national trade shows** [Wineries Unlimited, Unified, the new Eastern show] – Why you should attend, why it is worth the investment and time committed to one of these national events.
27. **Working with wholesalers:** the realities of getting into the wholesale game
28. **Realities of the retail shelf:** chains, independent stores: getting on the shelf in the best places – and what it takes to stay there.
29. **Working with the restaurant community:** why getting listed and staying on a quality restaurant list can be worth its weight in gold.
30. **Creating a media relations program for your winery:** do you really know how to work with the media? What techniques ensure the best and most 'ink' possible.
31. **Steak cookouts and other ideas in food service:** So you cannot or do not want to open a full service restaurant? Opportunities and options if you need food service.
32. **Gift shops as a supplement to income:** Raising the 'per cap' expenditures of your guests by creating an appealing gift shop.
33. **Affinity group marketing**: bicycling, pet parents, etc.: examples of marketing successes to various affinity groups when wine is added to their passion.
34. **Wine and food pairing programs:** How to and successful examples of wine and food programs that generate revenue and boost sales
35. Tasting Room Training: helping you and your front line staff to identify flawed wines. They are the last persons to touch your wines before it hits consumers' lips. They are the first persons to hear complaints about 'bad, spoiled, flawed wines.' This seminar will provide the tools to do a better job of showcasing your best wines and making sure only the best leaves your tasting rooms.
36. **Tasting Room Training**: providing tools and suggestions to get your tasting room staff to sell more on site and to take home more wines.
37. **Working with consumer groups**: American Wine Society, homewinemaker clubs: using the passion of amateur groups to build your business.
38. Winery-grower contract development: grapes to sell? Looking for a consistent supply of fruit? It has to be a win-win situation for both sides. Tips for mutually beneficial contract development.
39. Giving a good speech: Winemakers and growers can promote their business by offering to speak to civic, social and business groups. Hone your presentation skills.

40. **Working with and educating your legislative representatives**: how to effectively help legislators understand our industry's needs
41. **Developing, building and protecting your 'brand'**: your brand is your most important business tool – how to build, protect and market it
42. **Using the resources of OARDC:** extensions services available through our researcher community
43. **Bed and Breakfast opportunities**: starting your own, working with a neighbor
44. **Event Planning:** special events are ever more important parts of a winery's marketing mix. Learn to develop the best special event, be it large or small after this 'nuts and bolts' presentation.
45. **Tasting Room Training:** a sensory component tasting. A hands-on sampling session providing tools to YOU to help your front line staff to identify the major components in the styles and types of wines produced here in Ohio.
46. **Creating Curb Appeal:** first impressions are lasting. Some affordable ways to make your winery's 'front door' more appealing.

Survey responses from various regional meetings from the 2009 grant	5 meetings compoled				
	11/10/2009	11/3/2010	11/9/2010	11/30/2010	12/8/2010
	52 attendees 12 responses	12 attendees 4 responses	17 attendees - 6 responses	16 attendees - 8 respon	28 attendees - 10 respon
Scale: 5 high, 1 low					
1. good networking	4.7	4.25	4	4.75	4
2. applicable to my winery	4.3	4	4.5	5	4.25
3. regulatory info	4.9	4.5	4.5	5	4
4. cooperative spirit engend	4.2	4.5	4	4.75	4
5 do it again	5	5	4.5	5	4

The PAST Foundation

presents

Knowing Our Community

by Lauren Winkler,
Graduate Student of Anthropology
at The Ohio State University

Mid-Ohio Foodbank

Prepared under the Knowing Our Community Specialty Crop Project grant from the Mid-Ohio Foodbank,

Ohio Department of Agriculture

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The Ohio State University Department of Anthropology

and the Department of Anthropology at The Ohio State University.

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Knowing Our Community
Special Crop Project

Introduction

The purpose of this study was to identify specific foods that can serve local ethnic communities (Latino, Russian, and Somali) as a means to understand cultural differences in diet and identify specialty food crops that are currently unavailable to these populations. The process of globalization means a mobilization of people moving across the globe, often bringing parts of their own culture or diet with them (Phillips, 2006). Unfortunately, traditional foods that are part of a culture in one country may not be available in a new environment. Instead, people are faced with strange foods and lack of cultural knowledge as to what provides the healthiest diet (Booth et al., 2001). Through ethnographic research we hoped to discover what foods are missing from a traditional diet of Hispanic, Russian, and Somali populations in Columbus, Ohio and what changes people have made in their diet based on new foods that are available to them. The ability to provide traditional and foods could contribute to increased health – through preparation of familiar foods – and an easier transition into a new community.

Ethnography originally began as studies confined to non-literate population; anthropologists sailed off to far-away islands in an attempt to better understand cultures other than their own. Indeed, it was not considered ethnography unless it took place in a location far from the ethnographer's homeland (Wolcott, 2008). This view began to change, however, after World War II and during the Cold War when anthropologists were hired by the government to investigate problems within their own country (Spradley, 1974). Anthropologists became increasingly fascinated by subcultures within their own more complex societies and ethnography shifted emphasis from geographic context and location focus to specific problem-solving practices among different groups (Wolcott, 2008).

Ethnographies are an attempt to understand the cultural basis and values that are embraced by every society. Culture is not a behavior itself, but the underlying rules that shape how people conduct their own actions. Though culture cannot be directly observed, it can be inferred from an understanding of every day interactions (Spradley, 1980). Ethnographies produce storied versions of events and interactions; they represent every day encounters as critical communication (Beach, 2005). When working on an ethnography, the researcher becomes the student and allows their informants to teach them about their

way of life (Spradley 1979).

Often in a complex society individuals belong to several groups with exclusive cultural rules; for example, an individual might share some patterns with their family and some with their school or job (Spradley 1974). Similarly, people who have moved to a new country might experience a blending of their own traditional cultural beliefs with those learned in their new home. By comparing ethnographic data between the three ethnic groups interviewed, ethnographers compared empirical data to determine similarities and differences that might arise with a blending or distinction of culture, in addition to understanding the unique needs and perceptions of each group.

Methodology

This project's ethnographers studied three ethnic populations (Latino, Russian, and Somali) through the process of ethnographic interviews for the purpose of identifying specialty crops that are currently unavailable to these populations. These represent the largest ethnic groups in Columbus. Data was collected following Rapid Assessment Protocols that are focused on interviews the the collection of oral narratives. Interviews were semi-structured – though a set of fixed questions were used (see Appendix E for list), the interview took an open-ended form where the participant contributed much of their information through stories with little prompting from interviewer. The semi-structured interview has the benefit of preventing the ethnographer's personal bias from interfering too much with the questioning; however, a fixed set of questions also guarantees that similar data was collected from each participant to allow for cross-cultural evaluation (Wolcott, 2008). I am a graduate student with the Ohio State Department of Anthropology. I conducted all of the interviews for this project, in addition to data organization, interpretation, and analysis.

Fifteen participants were interviewed from each ethnic group, with a total of 45 interviews. Participants are labeled by ethnicity and then by number (ex: S-1 is the first Somali participant who was interviewed). Locations for interviews varied according to ethnicity; all interview locations are listed in Appendix A. Before each interview I read the statement of participation and explained the purpose of the study, including how the information collected would be used. Through this procedure every interviewee was aware that the final report would be anonymous and their name would not be used in any publications. Despite this, many people were reluctant to give their name to me at all, or only provided their first name.

The most productive method for locating participants was through a "middle-man," someone who was familiar with my study and could introduce me to others. This had the benefit of establishing trust between the interviewer and informant, the primary goal of every ethnographer (Spradley, 1972). This was especially useful for interviewing the Hispanic population. Overall the Hispanic group proved most difficult for interviews, despite my ingoing assumption that they would be the easiest to interview. Most people were wary of me when I approached and often would shake their head no before I finished explaining my

study. Identifying middle-men proved crucial to establishing trust. The best sources I had were business owners who allowed me to interview them and then subsequently introduced me to employees or customers. Frequenting the same stores multiple times established trust with the middle-man (in this case the store owners) that I was serious in my research; it also allowed access to informants of different gender/age, as introduced by the owner. When Hispanic store owners explained my study to his friends, people seemed much more likely to participate.

Identifying a middle-man was crucial for talking to Somali women who, as a whole, were difficult to contact and highly suspicious of outsiders. By talking with Somali men first, they would sometimes introduce me to other women and explain my study to them. Only then were most women willing to speak to me. The few women I did approach individually were working women who run shops or work for a business. It is possible that this career influence gives them more confidence in the community and they were not as afraid to converse with an outsider. Somali men were much more willing to talk to me than Somali women; on average, they were always very friendly and willing to help. Of the three ethnic groups, the Somali men were the most prone to story-telling, often going off on tangents from the questions and explaining various answers in great depth. I think the enthusiasm to talk came partly from their desire to make certain stories heard – specifically, many men complained to me about the prevalence of diabetes when they moved to America, something they attributed to a worsening diet and preservatives in American foods. When I was interviewing one person in a store, often others would walk over and join in, arguing over answers and waiting to be interviewed themselves.

One of the most difficult aspects of this study was identifying locations to meet potential participants. I began with a list of churches and community centers for each ethnicity. There are fewer options for the Russian group, so all of my interviews took place at the store attached to the community center. This allowed the store owner to become familiar with me, which in turn led to more participants through his help. It was easier to find locations for talking to Hispanics, as there are many more community centers and organizations. The Ohio Hispanic Coalition was especially helpful for finding participants- they allowed me to interview people they were working with in addition to supplying introductions to other Hispanic organizations. Many of my interview sites were found through them. The Somali group was the hardest for finding good interview sites. Though they had more community centers than the Russians, many of them were difficult to contact. The best source I found for Somali participants was a mostly-Somali mall where almost all of the stores were run by Somalis and the primary shoppers were Somali. Within that mall I was able to find a diverse group of Somalis by meeting different shop owners, who would introduce me to people willing to interview.

Across the three ethnic groups interviewed, the Russians were the most willing to talk to me. This is possibly related to two factors: first, on average the Russian people I talked to had been in America for a longer period of time and therefore were more willing to talk to an

outsider. Second, it is possible that Eastern European immigrants are accepted more easily into an American community and do not deal with the same level of mistrust or stereotype that Hispanic or Somali immigrants face. (A third possibility is that my own background is Eastern European and I most closely resemble the Russian participants; whereas I am clearly an outsider among Hispanic and Somali populations.) Either way, when I explained my study, Russian people were always very friendly and willing to help. However I often used a middle-man (the owner of the Russian center store) for the convenience of easy introductions.

The questions on the interview were chosen for a number of different reasons. The demographic section establishes basic information about each participant for later comparisons. The section 'Healthy vs. Unhealthy' was intended to elicit information regarding food shopping and specific foods that are consumed. There were a couple problems associated with this section. Many participants were unable to answer the question when asked to list the basic foods they bought (question 12) and could not think of very many. However asking about fruits and vegetables specifically (question 13) seemed an easier question to answer and sometimes reminded them of other foods they purchased. The final question in this section (question 16) was particularly troublesome; several people had trouble understanding the concepts of "healthy" and "unhealthy" and were unable to evaluate their diets on these terms.

The next section (Food Choices/Preferences) was more straight-forward, though many people had trouble remembering names of specific foods (primarily spices) to identify them. Similarly, the questions about farmer's markets were confusing to several participants because of the unfamiliar concept. When I explained farmer's markets as "outdoor" markets several interpreted this as meaning an "outsider market" (not of their ethnicity) and gave me answers such as Wal-Mart or Kroger's. This problem was encountered with participants of varying language skill levels, so it was not merely a translation problem but a conceptual problem.

One problem with the interviews was that people were not always willing to wait through the entire interview, despite my explanation of the time required and their original assent. Therefore I usually began with questions I considered more important and continued on to other questions if the interview was going well. Questions about age or children were usually among those I asked last, because many times I could infer them from the preceding discussion. Also, if I asked people first what kinds of foods they bought they had trouble forming a list; if I asked them specifically about fruits and vegetables first, they were sometimes able to broaden out to general types of foods.

Description of Major Themes

There were several major themes in this study that were addressed in the interview questions. Appendix B contains the tables for these major themes. The first theme regards difficult foods to find. There were three main questions regarding this topic: spices (question

17); traditional foods (question 18) and holiday foods (question 19). Unanimously all three ethnicities agreed there were no holiday foods they had trouble finding. There are a couple of potential explanations for this response. It is possible that, with more time in Ohio, holidays have taken on new traditions and foods. Thus they do not have trouble finding foods for the holidays because they no longer associate their holidays with foods from their homeland. It is also possible that ethnic grocery stores (I visited several through the course of my interviews) take care to stock holiday foods as these hold special significance.

When asked about traditional foods, there was a divide between the different ethnic groups. Almost 50% of Hispanics questioned (N=7) said they had trouble finding traditional foods. However only 20% of Somalis (N=3) and 1 Russian had trouble with this. The three Somalis, though interviewed separately, all agreed the toughest food to find in Ohio was "good milk." They claimed the milk here was not fresh enough and had too many preservatives. Hispanics ranged in their difficulties, though "good" jalapeños and corn tortillas were both mentioned more than once. It seems that both Hispanic and Somali complaints stem from food preparation techniques rather than the presence of a particular food. Though milk, jalapeños, and corn tortillas are all present in Ohio grocery stores, these foods are not always prepared in the traditional way.

When it came to spices, all three ethnicities had ~33% of the participants claim they had trouble finding certain spices. Unfortunately, another correlating trend is that many participants also had trouble remembering the names of the spices they missed. Often, interviewees explained that this was because they were young when they moved and they remembered a parent cooking with this spice or it was a locally grown spice that they had not bought in a store and therefore did not know the specific name. This was truer for the Somalis and Russians; the Hispanics usually knew the names of the spices they missed. This made it difficult to assess what sorts of spices they would look for in a farmer's market as no name was available and comparisons often became confusing to both the participant and the interviewer.

The participants were also asked if there were any fruits or vegetables they had trouble finding in Ohio. Both the Hispanic and Somali groups had trouble finding particular fruits; 60% of Hispanics (N=9) and 47% of Somalis (N=7) reported there were certain fruits or vegetables missing in Ohio. Of these people, 4 of the Hispanic and 2 of the Somali participants reported specifically that mangos were difficult to find. Two Hispanic respondents referred to plantains as difficult to find while 5 Somali participants simply missed the presence of "fresh fruit." The Russian participants, however, were far more satisfied; only 1 Russian participant felt there was a fruit or vegetable tough to find in Ohio, and that was actually a specific fruit preparation (R-5 felt that jarred tomatoes were difficult to find). The other 14 Russian participants were not missing any of their produce. One possible explanation is that Russia lacks the tropical climates of both Mexico and Somalia and therefore Russians do not miss fruits such as mangos, which are difficult to grow in an Ohio climate.

The final major theme from the interviews concerns farmer's markets. The interesting

split between ethnicities is that considerably more Somalis had trouble understanding the concept of a farmer's market while both Russians and Hispanics understood what the question was asking. Over 50% (N=8) of the Somalis interviewed did not understand what a farmer's market was; when I tried to describe it as an "outdoor" market they interpreted "outdoor" to mean "outside" market, as in a store outside of their ethnicity. The answers they subsequently gave (such as Wal-Mart or Giant Eagle) showed a continued lack of understanding. However only one Hispanic participant and one Russian participant had trouble understanding the concept of a farmer's market. Both ethnicities showed that ~60% (Hispanic N=10 and Russian N=9) of the participants did not shop at a farmer's market while ~40% (Hispanic N=4 and Russian N=5) would shop there occasionally. Of the 7 Somali participants who understood what a farmer's market was, none of them reported shopping at one. Some of the reasons listed were convenience (there were none near their house) or cost. However part of the problem is simply advertising – participants were either not aware of any farmer's markets though others who lived in a similar area reported one nearby. Many also had preconceived notions that farmer's markets would be considerably more expensive than a grocery store and had no idea that some foods are actually cheaper at farmer's markets.

Description of Commonality

There were several common themes identified throughout the three ethnic groups. The spreadsheets for these themes can be found in Appendix C. One common theme was who cooked at home most often (question 11). There were 31 participants who were married or had a live-in relationship. Of these 31, 77% (N=24) said that their wife or girlfriend cooked the majority of the time. Another 23% (N=7) said that they split this duty; none of the couples reported that the male was the primary cook. This held true across all three ethnicities.

Another common theme concerns the Mid-Ohio Foodbank. All 45 of the people interviewed claimed they had never used the Mid-Ohio Foodbank. Many of them did not realize this service existed and were amazed when I explained it to them. Others found this question insulting and thought I was implying they came from a low-income family. Because of this I usually did not push the discussion; I asked them once and if they appeared confused or upset I let the question go and took those responses as a "no." Another similarity is that only 2 of the 45 participants had a garden they tended. The most common reason across all three ethnicities was lack of space – many of them lived in apartment complexes or had very small yards.

The final similarity was kid's diets. Of the 24 participants who had children, 83% (N=20) thought their children had the same diet as them. Only 2 participants said their children had different diets and 2 replied "sometimes." There are a couple explanations for this. One possibility is that the majority of children were very young; not only did their parents have more control over their diets, but they had not been exposed to other children with

varying diets. The interview questions did not include the age of the children and not all parents volunteered this information. However the age of the parents varied greatly, so it is less likely that all of their children were of the same age (See Appendix A for ages of participants). Another possible explanation is that the parents assume their children have the same diets but in reality their kids eat very different foods when they are at school or other social situations. The parent either does not realize this or chooses to ignore this information.

Description of Unique Needs and Perceptions

In addition to the similarities described above, the interviews revealed considerable differences between the three ethnic groups. The spreadsheets for these unique themes are in Appendix D. The first difference concerns the amount of time each ethnic group has spent in Ohio. Overall the Russian participants have spent the most time in Ohio – the average time is 14.5 years with the median also falling at 14 years. The Hispanic average is 13.5 years – not too much shorter – but the median falls at 10 years and the mode is 4 years, revealing that overall the Hispanics interviewed have spent less time in Ohio than have the Russians. The Somali average, median, and mode all fall at 10 years, also less time than the Russians. Their range of 5-15 years is less varied than the Hispanics which range 2-31 years. The Somali participants interviewed seem to have arrived at Ohio in a smaller time frame than the Hispanics or Russians (Russian range was 2-41 years).

Another difference is the choice in grocery stores. I divided the stores listed by each participant into two categories: ethnic markets and chain stores (ex: Wal-Mart, Giant Eagle, Kroger's, etc.). People who listed both an ethnic market and a chain store were counted in the "both" category. Only 20% (N=3) of the Hispanics and Russians shopped only at an ethnic market, while almost 50% (N=7) Somalis shopped solely at ethnic markets. In addition 67% (N=10) of Hispanics and 47% (N=7) of Russians shopped only at chain stores while only 2 Somalis reported shopping at only chain stores. Somali participants then were much more likely to shop at their own ethnic markets than either Russians or Hispanics. It is possible that Somalis had more trouble finding their traditional foods outside of their ethnic markets whereas Hispanic and Russian foods seem to have pervaded standard American grocery stores to a larger extant. It is also possible that the Somali ethnic stores are more conveniently located or cheaper – two factors that could directly affect where a person chooses to shop.

Another unique theme concerns the question of health. Question 16 asked whether the participant thought their diet was healthy or unhealthy. However there were a number of participants who simply did not understand what the question was asking and had trouble supplying an answer. They had never evaluated whether the foods they consumed would classify as "health" foods and had trouble understanding this concept. I encountered this problem among people with a range of language skills, so the barrier was not linguistic

but conceptual. This may be somewhat of an Americanized view of food that has formed in the face of an obesity crisis and fast food obsession. However this was not true for all ethnicities. In the Somali group, 40% of the participants (N=6) had trouble understanding the concept and could not supply an answer, while only 20% of the Russian and Hispanic groups (N=3) had difficulty with this concept. Interestingly, among the participants who did answer there was nearly a 50/50 split between those who thought their diet was healthy and those who thought their diet was unhealthy. The main difference between ethnicities was in the conceptual understanding of health.

Conclusion and Recommendations

The purpose of this study was to understand the cultural differences in diet and food choices that are present in Somali, Russian, and Hispanic groups in Columbus, Ohio. The analysis of common themes and unique perceptions showed an interesting blend of globalized culture with differing ethnic needs. It is important to understand each culture's different perception when discussing issues of food. For example, questions that were easily answered by some ethnic groups (such as, "Is your diet healthy?") were trouble for other groups because they did not understand the underlying concept of health and diet. This interview process used the same question set for each ethnic group to allow for cross-cultural comparisons; however when dealing with each group individually it is important to keep these distinctions in mind. The common themes revealed that there are some similarities between the cultural patterns of each group, such as what their children eat and who cooks at home. This shows that even if the diet differs between the three ethnic groups, there are still similarities in the way their cultures handle meals and preparation.

There were several main themes of this study: in addition to assessing how well each group found traditional foods, participants supplied information on new foods that were acquired and shopping locations for each ethnicity. All three ethnic groups agreed that spices were the hardest to find in Columbus. However many of the participants could not remember specific names of spices, which makes it difficult to supply this resource. None of the participants interviewed had trouble finding particular holiday foods – it is possible that holiday foods are specifically imported for religious significance or that traditions have changed since moving to Ohio and new foods are associated with holidays. Also, none of the participants had ever used the Mid-Ohio Foodbank, and many were unaware of its existence. More people in these ethnic groups could benefit from such an organization if they were educated on its location and services. Participants from the Somali and Hispanic groups expressed more difficulty in finding fresh fruits and vegetables than the Russian participants; possibly this is due to differing climates in their home countries that shaped their perceptions of "fresh" or introduced more tropical fruits. Finally the Somali population had a harder time understanding the concept of a farmer's market than either the Hispanic or Russian populations. The biggest problem with shopping at a farmer's market is both

poor advertising to ethnic populations and misconceptions about what a farmer's market is. Even participants who understood the concept thought that these markets were far away and out of their price range, when other interviews revealed close-by markets. If farmer's markets were aware of ethnic needs and advertised specifically for their convenience and price, ethnic populations would probably be more likely to shop there. Somali populations might be tougher to attract; the analysis of ethnic vs. chain stores showed that Somali participants were much more likely to shop solely at ethnic stores than either Hispanic or Russian communities.

The problems associated with diet and food in ethnic populations stem from the process of globalization; a community in a new city might not have access to some of the foods they previously ate. Unfamiliar foods often lead to choices that result in less healthy (Rathje, 2001). Unfortunately there are significant challenges for immigrant communities due to some ethnic biases towards shopping in "outside" markets (for example, the Somali unwillingness to shop at chain grocery stores); a misunderstanding of concepts such as "farmer's markets" and "health;" and the inability to recall what traditional foods they lack, which may potentially prevent a market from providing them. One very effective way to tackle these problems is through education and advertising – helping each ethnic group to understand and explore new foods and markets available to them and improve their diet by analyzing foods they eat for health value and not simply cost and convenience. Only through this education can food practices for ethnic groups in Columbus improve.

Appendix A: General Information

A.1 Locations of Interviews

Informant ID#	Place
H-1	Ohio Hispanic Coalition
H-2	Juniors Taco Stand- Highland and 5th
H-3	Maravillas Market- 5th and Fosythe
H-4	Santa Cruz, Parroquia
H-5	Maravillas Market- 5th and Fosythe
H-6	Ohio Hispanic Coalition
H-7	Juniors Taco Stand- Highland and 5th
H-8	Weber Taco stand
H-9	Ohio Hispanic Coalition
H-10	Ohio Hispanic Coalition
H-11	Santa Cruz, Parroquia
H-12	Maravillas Market- 5th and Fosythe
H-13	Ohio Hispanic Coalition
H-14	Juniors Taco Stand- Highland and 5th
H-15	Santa Cruz, Parroquia
S-1	Global Mall
S-2	Global Mall
S-3	Global Mall
S-4	Global Mall
S-5	Global Mall
S-6	Global Mall
S-7	Global Mall
S-8	Global Mall
S-9	Global Mall
S-10	Global Mall
S-11	Global Mall
S-12	Global Mall
S-13	Global Mall
S-14	Global Mall
S-15	Global Mall
R-1	Russian Club Store
R-2	Russian Club Store
R-3	Russian Club Store
R-4	Russian Club Store
R-5	Russian Club Store
R-6	Russian Club Store
R-7	Russian Club Store
R-8	Russian Club Store
R-9	Russian Club Store
R-10	Russian Club Store
R-11	Russian Club Store
R-12	Russian Club Store
R-13	Russian Club Store
R-14	Russian Club Store
R-15	Russian Club Store

A.2 Ages of Participants

Ethnicity	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
Hispanic	1	5	1	1	2	3	2	0
Somali	3	1	3	1	2	4	1	0
Russian	0	3	1	2	4	3	1	1
Total	4	9	5	4	8	10	4	1

Appendix B: Major Themes

B.1 Difficult Foods to Find

Ethnicity	Tough Spices to Find?	Tough Traditional Foods to Find?	Tough Holiday Foods to Find?
Hispanic	9- No 5- Yes 1- Unsure	7- No 7- Yes 1- Unsure	15- No
Somali	10- No 5- Yes	12- No 3- Yes	15- No
Russian	11- No 4- Yes	14- No 1- Yes	15-No

B.2 Difficult Fruits/Vegetables to Find

Ethnicity	Trouble Finding F/V	No Trouble Finding F/V	Totals
Hispanic	9	6	15
Somali	7	8	15
Russian	1	14	15
Totals	17	28	45

B.3 Farmer's Markets

	Yes – shopped there	No – didn't shop there	Didn't understand concept	Total
Hispanic	4	10	1	15
Russian	5	9	1	15
Somali	0	7	8	15
Total	9	26	10	45

Appendix C: Common Themes

C.1 Who Cooks at Home

Informant ID#	Marital Status	Who Cooks?
H-1	Married	Wife
H-2	Single	Girlfriend
H-4	Married	Her
H-5	Married	Wife
H-8	Married	Her
H-9	Married	Her
H-11	Single	Both
H-12	Married	Her
H-13	Married	Both
H-15	Married	Her
S-1	Married	Both
S-2	Married	Wife
S-3	Married	Wife
S-4	Married	Wife
S-7	Married	Her
S-8	Married	Her
S-11	Married	Her
S-12	Married	Her
S-14	Married	Both
S-15	Married	Her
R-1	Married	Her
R-2	Married	Wife
R-3	Married	Wife
R-5	Married	Both
R-6	Married	Her
R-8	Married	Her
R-9	Married	Her
R-11	Married	Her
R-13	Married	Her
R-14	Married	Both
R-15	Married	Both

Wife cooks = 24
Husband Cooks = 0
Both cook = 7
Total = 31

C.2 Mid-Ohio Foodbank

Informant ID#	Do you use the Mid-Ohio Foodbank?
H-1	No
H-2	No
H-3	No
H-4	No
H-5	No
H-6	No
H-7	No
H-8	No
H-9	No
H-10	No
H-11	No
H-12	No
H-13	No
H-14	No
H-15	No
S-1	No
S-2	No
S-3	No
S-4	No
S-5	No
S-6	No
S-7	No
S-8	No
S-9	No
S-10	No
S-11	No
S-12	No
S-13	No
S-14	No
S-15	No
R-1	No
R-2	No
R-3	No
R-4	No
R-5	No
R-6	No
R-7	No
R-8	No
R-9	No
R-10	No
R-11	No
R-12	No
R-13	No
R-14	No
R-15	No

C.3 Kid's Diets

Informant ID#	# of Kids	Do kids have the same diet as parents?
H-2	3	No
H-4	3	Sometimes
H-5	3	Sometimes
H-6	5	No
H-7	3	Yes
H-9	1	Yes
H-10	1	Yes
H-12	4	Yes
H-13	1	Yes
H-15	2 – 1 older and out of house	Yes
S-7	3	Yes
S-8	2	Yes
S-11	2	Yes
S-12	3	Yes
S-14	1	Yes
S-15	3	Yes
R-1	4	Yes
R-4	1	Yes
R-5	1	Yes
R-9	2	Yes
R-11	2	Yes
R-13	4	Yes
R-14	2	Yes
R-15	1	Yes

Yes = 20
No = 2
Sometimes = 2
Total = 24

Appendix D: Unique Themes

D.1 Time Spent in Ohio

Ethnicity	Average Time in Ohio	Range of Years in Ohio	Median of Years in Ohio	Mode of Years in Ohio
Hispanic	13.5	2-31	10	4
Somali	10	5-15	10	10
Russian	14.5	2-41	14	10, 11, 14, 21

D.2 Grocery Stores

	Shops at Ethnic Market	Shops at Chain Store	Shops at Both	Total
Hispanic	3	10	2	15
Russian	3	7	5	15
Somali	7	2	6	15
Total	13	19	13	45

D.3 Diet and Health

	Yes – Healthy	No – Not Healthy	Didn't Understand	Total
Hispanic	5	7	3	15
Russian	6	6	3	15
Somali	4	5	6	15
Total	15	18	12	45

Appendix E: Interview Questions

DATE: _____

INFORMANT ID #: _____

PLACE OF INTERVIEW: _____

SEX: ☐ MALE ☐ FEMALE

MARITAL STATUS: ☐ SINGLE ☐ DIVORCED ☐ MARRIED ☐ FREE UNION ☐ OTHER

AGE: ☐ 20-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41-45 ☐ 46-50 ☐ 51-55 ☐ 56+

I. DEMOGRAPHICS

1. Where were you born?

2. A. How long have you been living in Columbus, Ohio? B. Where did you live previously? C. How long (total) have you lived in the US?

3. Where in Columbus do you live?

A. North	
B. South	
C. East	
D. West	

E. What do you call your neighborhood: _____

4. What language(s) do you speak?

5. How many adults live in your household?

6. How many children live in your household?

7. Do your children eat the same foods as you?

   A. Yes B. No

8. What are some of the foods that your children ask you to prepare for them?

   How did they start to like these foods?

   A. Family
   B. Friends
   C. School
   D. Other _____

HEALTHY VS. UNHEALTHY

9. A. Where do you go grocery shopping? B. Who does the grocery shopping?

10. Why do you shop at this/these place(s)?

11. Do you eat at home the majority of the time?

A. Yes B. No

C. If yes, who cooks?

D. If no, why not?

12. What are some of the basic foods that you frequently buy? List the food items:

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

13. What are some of the fruits and vegetables that you normally buy?

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

14. Are there any types of fruits/vegetables you would normally eat, but have difficulty finding in Columbus?

A. Yes B. No

If yes, what fruits/vegetables?

15. Can you list any foods you think are unhealthy, but that you still buy? Why?

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

16. Do you feel that your diet is primarily healthy?

A. Yes B. No

C. If No, Why not? Is this different since moving to Columbus, OH?

II. FOOD CHOICES/FOOD PREFERENCES

17. A. Are there any types of spices you are unable to find in Columbus? B. If yes, list the names of spices.

18. A. Are there any traditional ingredients you have trouble finding or cannot find in Columbus? B. If yes, list the ingredients.

C. What do you use as substitutes for these ingredients?

19. A. Are there traditional foods that you eat during the holidays? B. Are you able to find all of the ingredients to make these traditional foods?

20. A. Are there any foods that you would not normally eat, but have incorporated into your diet since living in the United States? B. If yes, can you name these foods?

21. Have you tried to cook new recipes for your family?

A. If yes, why? What kinds of foods have you prepared?

B. Where did you get these new recipes?
Family
Friends
Others _____

III. FARMER'S MARKET

22. Is there a farmers' market in your area?

23. A. Do you have access to the farmers' market in your area? B. If not, why?
C. If yes, Why do you shop there? Do they provide the foods you want/need?

IV. HOME GARDENING

24. A. Do you have a garden at home? B. If not, is there a community garden to which you have access?

25. If yes, what do you grow?

26. Why did you decide to grow a garden at home?

27. Have you successfully raised the fruits/vegetables you wanted?

V. OHIO FOODBANK

28. Do you use the services at the Ohio FoodBank?

A. Yes B. No

29. How did you learn about the FoodBank?

A. Family
B. Friends
C. Others _____

30. What are some of the food items you normally get at the FoodBank?

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

31. Do you use all of the food items that you get at the FoodBank?

A. Yes B. No

32. A. Are there any food items that you get, but do not normally consume? B. What?

33. Are there any items you typically get from the FoodBank for your children?

34. A. Are there any types of foods that you obtain at the FoodBank that your children do not like to eat? B. What are these foods?

35. Can you think of any foods you would like FoodBank to offer?

Appendix F: Statement for Participation

The Ohio State University Consent to Participate in Research

Study Title: *Knowing Our Communities*

You are being asked to be in a research study of food choices and food preferences among ethnic communities in Central Ohio. We will ask you about your food preferences and food choices that form part of your daily consumption. We will also be asking information about your accessibility of local foods and experiences with local food networks to examine how the local food system affects your ease and accessibility to specialty food crops.

Our study focuses on identifying specialty food crops that can serve local ethnic communities (Somali, Latino and Russian) in Columbus, Ohio to ease the access of specialty crops to local ethnic groups they normally would consume. There are no unique risks from participating in our study and there is no discomfort involved. You may also learn a bit about your life in Columbus that you were not aware of. You have the right to withdraw from our study at any time and you can refuse to answer any questions with no harm. Your information will be kept strictly confidential and you will be identified by name but only with a randomly assigned code.

You may choose if you want to take part in this study. You may choose not to take part in this study. If you decide to take part in the study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you. You will not lose nay of your usual benefits.

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Report on the economics component of the
Ohio Specialty Crop Promotion Program project

"Exploring Pumpkin Seed as a Locally Produced, Processed, and Marketed Snack Food"

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June, 2011

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Summary

Complex market analysis on pumpkin seeds as a snack food is well beyond the scope of funds provided for market/economic research within this project. Detailed analysis of secondary data and consumer trends was conducted to interpret possible market opportunities and constraints. A small (e.g. pilot) consumer study was able to be conducted and provide descriptive statistics related to existing consumer demand, preferences and willingness to pay for flavored pumpkin seed (pepita) snacks. We were also able to provide a farm enterprise budget for producing and harvesting pumpkin seeds. The overall outlook for flavored pumpkin seeds as a snack food sold alone is extremely tenuous. Nuts and seeds are a limited market to begin with. Of those surveyed, more than half (51%) said they did not buy pumpkin seeds/pepitas. Of those who did buy, 18% purchased once a year and 21% purchased "several times a year." More critically, there was deep unwillingness on the part of those surveyed to buy plain roasted pepitas (37%) at any price, even more so for a flavored version (60% would not buy). Of those willing to purchase the proposed snack product, few were willing to pay at levels felt to be profitable (see Table 2). Similarly, taste was rated the leading driver of snack food purchases and previous experience with the product ranked fourth. Lack of experience is illustrated in the reported consumption data and relates unfamiliarity with the product (and, therefore, its taste). Numerous respondents volunteered a concern about the taste and value of eating raw/flavored pumpkin seeds, raising the market entry hurdle. While these negative responses to the proposed product are somewhat damning, it must be remembered that the survey populations was necessarily limited. Likewise, there are elements within the secondary data that might encourage exploration of a possibly greater potential for pepitas as ingredients in other products, either as a "seed" mixed with other foods in trailmixes, energy bars and the like, or as a processed product used to add nutrition in more of a flour or paste form. Both trailmix and energy bar products command the premium prices that might (research needed) be enough to justify the costs of production and harvest of pumpkin seeds. Likewise, use of the seeds in flour and paste form would also be at the lower cost of production inherent in commodity production. In both cases, marketing costs would be negligible.

Following are outputs from this project:

(1) Market Background: PI Analysis of Secondary Data relevant to the pumpkin seed market potential;
(2) Pilot Consumer Study Findings;
(3) References
(4) Consumer Study Tables
(5) Enterprise Budget for Pumpkin Seed Snack Production (previously submitted)

Market Background – PI Analysis of Secondary Data

Universal data for both production and marketing of pumpkin seeds (aka pepitas) is not widely collected and reported, so this portion of our analysis on collective statistics (mostly from industry reports). Most of the data used is through 2009. Additional analysis is based on years of research and experience with consumer purchase patterns and product introductions.

Pumpkin seeds generally fall in the "nuts and seeds" and "snack foods" or processed specialty foods data in various industry reports. Because of this, it can be hard to get a full view of "real" market performance. Therefore, we end up looking at categorical performance and over-riding consumer trends relevant to their marketability. These categories are primarily impacted by two significant consumer food impact factors: the general economy, and healthy eating trends. Additionally, because of the primary retail forms for seeds, they are also affected by conditions in the vending and convenience store sales channels.

The producer price index for processed nuts and seeds declined steadily between 2006 and 2009. This appears to reflect a reduced demand and impact of food safety scares related to peanuts in several of those years. It's impossible to tell how much scares in one commodity within the category may have affected sales of other commodities in the same category. Likewise, negative economic conditions generally caused overall demand for snack-oriented products to contract and focus (specialize) during the same period. The index for 2010 (preliminary) shows some small rebound, no doubt related to increased consumer confidence on the food safety front.

Unit sales of nuts, seeds, dried fruits and trail mixes (category) declined 14.9% between 2007 and 2009, only slightly less than the leading decline for shelf-stable juices and functional drinks that began a sharp fall from consumer favor during that period. 88 million units of the nuts, seeds, dried fruits and trail mixes category were sold in 2009. Sales for that same category, during that same period, declined 2.9% (not including WalMart or Trader Joe's sales which are not publically reported). This was during a period of recession in the U.S., however, all-food sales actually increased 5.3% during that time.

Snack nuts outperformed other snacks on sales volume and revenue growth (+7%) in 2009 according to 2009 State of the Snack Industry report presented March 31 at SNAXPO by Sally Lyons Wyatt, Senior Vice President, Information Resources Inc. She reported drug stores as the primary growth area for all snacks (5.8% snack $ growth), although the most snack dollars are spent at convenience stores (7.1%). It is unclear whether such growth will continue through 2011 and forward as drug stores make a major commitment to providing store space to healthier food staples and fresh products in areas they operate in that are also classified as food desserts.

Vending and Convenience Store sale trends are seen as critical to the snack/nuts&seeds product markets. Here, the news isn't particularly positive. Fiscal 2009 was the biggest one-year decline in vending industry sales. Total sales were $19.85 billion, down 10% from 2008 and continuing the decade long slide from $24.49 billion sales in 2000 and a secondary peak of $23.21 billion in 2007. An aggregate decline of 15% between late 2007 and 2009 undid all growth the industry had shown in the past 15 years and is seen as ominous for an industry facing major technological change, market access questions, and serious revisions of consumers' product expectations. 21% of the total vending sales in 2009 was for candy/snacks/confections (where seeds/nuts/trailmix are counted). About 1.4% of 2009 vending sales went to nuts and seeds, down 3.3% from 2008 even though the number of nuts and seeds stocked in machines increased. It's believed that a major peanut recall early in the year was a confounding factor. What has yet to shake out in this category is whether sees and nuts will gain or lose from consumer and political pressures to improve the health quality of snacking in America. On one hand, they're viewed as salty (dubbed "unhealthy") snacks. On the other, they may be part of some very healthful energy-based meal and snack solutions (e.g. trailmixes, meal bars).

Convenience Stores have long been a primary market outlet for seeds and nuts and, indeed, are one of the places most likely to stock pumpkin seed snacks currently (albeit sporadically). The C-Store sector is currently going through some major mission changes with the effect on such traditional products unclear. In general, salty snacks are still major products for C-Stores. However, the current emphasis in the channel (driven by health and convenience eating trends) is on more fresh, healthy meal and snack solutions. This includes major expansion in the past four years into ready-to-eat meals/snacks with more attention to nutritional value, and experiments in distributing fresh produce and other staples in areas suffering a deficit of traditional grocery stores. What this portends for seeds and nuts in general, and pumpkin seeds in particular, depends greatly on the way the product is positioned.

It may be a bit of a stretch, but we could see some optimism for pumpkin seeds going forward if we take a leap of faith from several observations reported in the trade media from the 2010 trade show of the National Association for the Specialty Food Trade: nuts and seeds seemed to be popular as an ingredient (although not necessarily pumpkin seeds) and pumpkin was an emerging flavor, especially for fall-marketed products (although not necessarily in seed form). Grains nuts and seeds were cited as one of five major food trends by experts at this show, with pumpkin showing up in nut-oriented confections and in unlikely combinations of salsa or other processed foods. What this primarily indicates for this project is that the greater potential for pepitas might seem to be as ingredients in other products, either as a "seed" mixed with other foods in trailmixes, energy bars and the like, or as a processed product used to add nutrition in more of a flour or paste form. Reports from the trade, coupled with health/general eating trends, point to what I believe is probably the greatest potential for pumpkin seeds in emerging markets. Without significant consumer data to show otherwise, demand for these seeds as a (flavored or unflavored) segregated snack food, seems of limited potential. Consumers of seeds and nuts are generally limited and tend to exhibit loyalty to their traditional products. However, increasing potential may be from the use of pumpkin seeds as ingredients to processed foods or, perhaps of more potential, in mixes of grains, fruits and seeds that are sold in the snack market with an eye toward promoting their various health benefits (there are several examples emerging in the health food markets now). Again, data is limited, but some of this interest may be reflected in the growth of nut and seed varieties introduced as new products in 2009. Datamonitor's Product Launch analytics database shows 289 new nut/seed products out of 2,980 total snack, cookie, and cracker products in 2009.

Overall, consumer trends for 2010, 2011, and the foreseeable future lean several directions: cost effectiveness, healthfulness, simplicity. More than three-quarters of Americans will claim to be trying to eat more healthfully in most surveys, and over half are looking to eat to prevent health problems or address existing conditions. Some 82% claim to go for snacks with nutritional value, according to one survey. Even with the slowly rebounding economy, all indications are that consumers will continue their new frugality, albeit with the occasional "treat" in their food spending – 69% still enjoy trying new products. Numerous surveys, including past research we've done at Ohio State, echo that found in the National Grocers Association's 2010 Consumer Survey Report: 97% of consumers are cost conscious on their first purchase of a product and price sensitivity continues forward. About 84% of them look closely at health claims, and 76% pay attention to where a product was produced (a positive for any locally grown processed foods). Synthesizing the numerous studies we've read, it would be safe to rank consumers' priorities for trying new products in the category of pumpkin seeds/processed products containing pumpkin seeds as: (1) taste, (2) price, (3) freshness/quality, (4) healthfulness/health claims, (5) origin, (6) availability. Once a relationship with that product is established, the ranking would change slightly: (1) consumer's perception of return on investment in that product (i.e. ratio of price-to-health/taste attributes), (2) price, (2) convenience, (3) availability, (4) origin. Note that convenience moves into the equation, basically equivalent with price, once a product becomes part of the normal purchase pattern… this is primarily because of the seeds' place in the snack food category.

Pilot Consumer Survey Findings

This research was designed as a pilot study for future efforts to examine potential high-value food products that could become new markets for fruit and vegetable growers. Specifically, this survey research is helping design a larger study that will address the potential for pumpkin producers to expand from their current carving pumpkin, pie and ornamental markets into the healthy-snack sector and is part of a broader line of study by the investigator into consumers' demand and willingness-to-pay for specific product attributes and health claims. The product under consideration is a toasted pumpkin seed (a.k.a. Pepitas) that may or may not be flavored. As a pilot, the project is designed to (1) Determine parameters of consumer interest in the general snack category of nuts and seeds and toasted pumpkin seeds particularly; (2) Determine a limited set of drivers of purchase decisions for the snack category into which the proposed project falls; and (3) guide recommendations related to the economic viability of the proposed product and other possible options for this commodity sector. As stated in the project proposal and preliminary reports, this project was not able to fund enough observations to draw major conclusions relevant to any broad population group. However, the geographic representation in the sample ended up considerably broader than planned and the sample heavily favored the high-income, highly educated markets typically targeted for new specialty foods with health-related attributes.

Background and Rationale

The fruit and vegetable marketing business is inherently on the cusp of "disaster" at any single time. Weather is an obvious peril faced by all farmers. Less obvious and perhaps more risky is change in consumer interest that can be brought on rapidly for a wide variety of reasons. Therefore, it behooves producers in this industry to be on the constant lookout for new market opportunities. Ohio's $16.7 million pumpkin production accounted for 10.4 percent of the U.S. total in 2010, despite being down almost 11 percent from 2009. At the same time, pumpkin prices were estimated at to have dropped $3.10 per hundredweight to $15.10 (National Agricultural Statistics Service, 2011). With increasing production costs, profitability is rapidly becoming a major problem in this sector. Therefore, producers and marketers do what they always seem to do in the farm and food industry, and look to add value to a commodity through processing. Recent commercial availability of pumpkin varieties that product hull-less seeds led horticulturists and producers to ask about their potential for snack food markets. Pumpkin promoters point to the seeds as a good source of magnesium, manganese, phosphorus, iron, copper, protein, and zinc. Additionally, pumpkin seeds contain phytosterols, compounds found in plants that are believed to reduce blood levels of cholesterol, enhance the immune response and decrease risk of certain cancers. They also contain both Omega 3 and Omega 6 fatty acids, which have been shown to reduce inflammation and help prevent risk factors associated with chronic diseases such as heart disease, cancer, and arthritis. This would seem a perfect match for the current trends toward healthy eating and convenience (Drewnowski, 2009). The question at hand is whether enough consumer demand exists or could be generated to encourage farmer investment in the machinery needed to harvest and process their pumpkins for the seeds alone.

Dried pumpkin seeds, sometimes marketed as Pepitas are a traditional Latin American snack growing in popularity. National production reporting is typically combined with sunflower seeds. In the year ending February 2009, category sales growth was 7.8% (Wyatt, 2009). Pumpkin seeds are primarily sold salted but, with increased growth in product sales, have begun to feature flavors from their Latin American roots. Pepitas are also showing up more often in trail mix and other blended products. In examining the potential market for pumpkin seed snacks, several other trends come to bear – aging consumers propensity to eat foods with attributes that prevent or "cure" health problems; a consumer population that is increasingly

more exploratory in terms of new products and tastes; and a rising ethnic diversity in food product marketing.

The recent interest in local and niche food markets has garnered increasing attention in the research literature. And while every study contains different elements relevant to this project, several are worth mention. A number of projects in Ohio and surrounding states determined a consumer interest in, and willingness to pay a premium for, foods that were identifiable as having local or health-related attributes. Darby et.al (2007) was the first of several projects that documented Ohio consumer interest in fresh or processed products that had either local claims or related quality claims (see also Stan Ernst, Batte, & McNaull, 2077; S. Ernst & Darby, 2008; McNaull, 2007). Eastwood (1998) examined consumer attitudes toward fresh produce with an eye toward market development, and Espejel (2007) found origin to be a motivator in consumer response. Among the many articles related to food-health relationships, Drichoutis et.al (2005) and Ferguson (2010) stand out for their observations on the contradictions inherent in consumer product marketing related to health claims and on the impending policy battles brewing as more such foods are introduced and confuse the marketplace. However, much of the literature focuses on fresh produce and commodity foods with little having been done on market demands for processed, local foods and even less research in the area of snack foods. The proposed project, while exploratory in nature, would make some contribution to that literature and lead to more detailed study. At the very least, we would expect to gain a better understanding of snacking consumers and product attributes that drive their behavior. Given that this is a pilot project with an limited, albeit carefully designed sample, care must be take to not extrapolate findings too broadly. Benefits from this research could occur on several fronts: producers will gain a better understanding of potential customers and might identify some new product opportunities. Should and acceptable product be developed based on our findings, consumers would gain from availability of tasty, healthy snack choices.

About the Consumer Study Population

65 individuals were interviewed at two different locations selected to provide a fairly broad range of consumer types. One location was an major-city public market and festival location and the data was collected at the time of a city festival and major national trade show…attendees of both events were present at the site of data collection. The second location was a national gathering of consumers who also provide counseling, finance, and education to specialty food and value-added farming sectors. The population was 43% male and 57% female. The 65 households represented each averaged 0.28 children (under 18 years) with a calculated average age of 7.61 years, and had 1.42 adults with a calculated average age of 39.70 years. Of those responding, 77% did more than half their household's grocery shopping. 41% of households in the study spent $0 to $80 a week on groceries, 41% spent $80 to $160 a week on groceries, and 16% spent $160 to $320 a week on groceries. 75% of respondents most often purchased what they considered to be snacks at grocery stores, with another 17% buying at Organic food stores. Surprisingly, only 2% said they bought snack foods at convenience stores or gas stations, a major departure from national buying patterns.

The population did skew toward higher education and income than would be average for a U.S. sample. 55% of the sample reported some graduate or professional degree, another 32% had a bachelors degree, 5% and Associate degree, 3% reported "some college", 3% high school diploma or equivalent, and 2% some high school but no diploma. 77% had fulltime jobs and another 8% were self employed, 6% worked part time and 3% were retired. The rest were either looking for work (2%), students (3%) or homemakers (2%). Table 3 shows the population overwhelmingly self-reported as white/Caucasian. No individuals of Spanish/Hispanic/Latino origin were in the 98% of the survey group that reported a racial identity. The percentage of Black/African American respondents was slightly below the national population average but in

line with previous surveys of similar samples. Asian, and Pacific Islander respondents were both considerably above what we would normally be able to survey.

As previously reported, respondents had a relatively high income, with 73% reporting household income of $50,000 or more (national median household income was $50,221 in 2009). See Table 4 for a detailed distribution of sample income

Snack-buying habits.

When we asked about their buying habits for related snack products, more than half (51%) did not buy pumpkin seeds/pepitas. Of those who did buy, 18% purchased once a year and 21% purchased "several times a year" (less often than monthly or weekly). Of the snacks we considered (sunflower seeds, sunflower kernels, peanuts, tree nuts, raisins, trailmix and jerky), Peanuts were most popular – 90% of respondents claimed to purchase them as snacks at some time during the year. Raisins (84%), treenuts (80%) and trailmix (76%) were next most likely to be purchased as snacks by these consumers. Note that this response was for purchases as snacks and not as ingredients for non-snack items. Somewhat surprisingly, sunflower seeds (55% "do not buy") and kernels (71% "do not buy") were even less popular than pepitas. This contradicts existing industry sales data and possibly reflects the demographics of our sample. The relative popularity of trailmix in this population, along with its reported growth in sales by industry, may indicate some market opportunities for ingredients (e.g. pumpkin seeds) in such products. Given this dataset, however, that is merely informed speculation that would require further investigation.

Drivers of snack purchases.

Part of this project aimed to rate the importance of various product demand drivers that might be considered for the snack market. With any study of this size, responses are spurious. However, we think there may be some instruction in this data. Table 1 shows the reported preferences of this population. In general, I find these results to be in line with previous work on consumer product preferences…especially products viewed as snack/feel-good products Taste is tops . Freshness, always a concern with snack foods, ranked second. Some may be surprised by the considerably low ranking of both brand name and organic as product attributes. We might infer, however, that "previous experience with the product" (ranked 4th) might trump "brand name." Similarly, "packaging appearance" is ranked relatively low. A larger sample would allow modeling that would determine how much "packaging appearance" is caught up in "product appearance."

We specifically asked about respondents' understanding of health effects of eating pumpkin seeds. 38% said they didn't what any specific health effects might be. 38% thought pumpkin seeds were "generally good for me." No respondents thought the seeds were bad for them, and 6% claimed to know "know the specific health benefits" of eating pumpkin seeds.

Willingness-to-pay.

One of the more important elements to this survey was evaluating respondents' professed willingness to pay for pumpkin seeds and/or flavored pumpkin seeds as a snack item. Samples of the size designated by the overall project proposal can merely be used to provide observation of potential market value and to guide larger studies. To do this we presented respondents with a selection of snack products (Plain roasted sunflower seeds, Flavored sunflower seeds, Planters peanuts, Sunflower kernels, Blue Diamond Almonds , Plain roasted pumpkin seeds, Flavored pumpkin seeds) and asked to choose a price closest to the most they thought they would be willing to pay for a single-serve packet of each. Price choices were in 50-cent intervals from $1.50 to $5.50, with an additional choice for "Would not buy." Our interest here was to get a hint at what consumers might value either plain roasted pumpkin seeds or flavored pumpkin seeds at in a larger study (See Table 2). The additional products were added as

reference items to help respondents calibrate their pricing possibilities. 37% of respondents said they would not buy the plain roasted pumpkin seed product and 60% would not buy the flavored product. Of those who would buy the plain roasted product, no one would pay more than $3.50 and the majority of positive respondents would not pay more than $2.50.

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Table 1. Average rating of attributes by consumers.

Attribute	Average Rating scale of 1-7 (1= least, 7= most important)
Taste	6.38
Freshness	6.05
It's a healthy snack option	5.70
Previous experience with product	5.63
It guarantees quality ingredients	5.17
It's ready to eat (convenient)	5.13
Product appearance	5.11
Support local business	5.08
Support regional economy	4.95
Nutritional information available	4.94
It was Locally grown/processed	4.73
Price	4.31
Packaging appearance	4.29
Organic	3.84
Brand name	3.65

Table 2. Percentage who would purchase at stated price.

	Would NOT buy	$1.50	$2.00	$2.50	$3.00	$3.50	$4.00	$4.50	$5.00	$5.50
Plain roasted pumpkin seeds	37	19	17	16	10	2	0	0	0	0
Flavored pumpkin seeds	60	11	11	10	0	6	2	0	0	0

n=63

Table 3. Reported racial identity

	% of total	U.S. Avg
White/Caucasian	83	72.4
Spanish/Hispanic/Latino	0	16.3
Black/African American	8	12.6
Asian	6	4.8
Pacific Islander	2	0.2
Preferred not to answer	2	

Table 4. Percentage reporting income by category

Income category	% of respondents
Under $15,000	5
$15,000 to $24,999	3
$25,000 to $34,999	3
$35,000 to $49,999	11
$50,000 to $74,999	8
$75,000 to $99,999	30
$100,000 to $149,999	22
$150,000 to $199,999	10
$200,000 and up	3
Prefer not to answer	5

The Ohio State University South Centers

Specialty Crops Cooperatives Feasibility Report

The Ohio Department of Agriculture

Executive Summary 2011

Executive Summary

Ohio Department of Agriculture - Specialty Crops Cooperatives Feasibility Report

OSU Coop. Dev. w/Tom Snyder-AGR-SCG-09-*016* (October 1, 2009 to September 30, 2011)

Ohio State University South Centers conducted a feasibility study and provided technical support for cooperatives and groups to support formation and operation of specialty crop businesses. The following is a summary of the results of those efforts.

The Cooperative Feasibility Study steering committee was formed and met regularly early in the project to provide direction and guidance for grant activities. The Ohio State University South Centers' Specialty Crop Extension Educators, Business Development, and research staff made up the committee and included:

- Maurus Brown, sub-committee chair, Feasibility Study activities.
- Brad Bergefurd, Horticulture Extension Educator and specialty crop grower
- Julie Fox, Direct Marketing Specialist, sub-committee chair, Best Practices review
- Chris Smalley, Small Business Development Counselor, sub-committee chair, Sample Business Plans development
- Tom Snyder, Program Manager, Ohio Cooperative Development Center, chair, Cooperative Development Technical Support sub-committee.
- Joy Bauman, Information Associate, recorder, and reports development
- Christie Welch, Small Business Development Counselor, Farmers' Market Specialist, and specialty crop grower - chair, Steering Committee meetings

(Amalie Lipstreu and Lori Panda, ODA also attended several meetings by phone conference)

A questionnaire was designed and developed to determine the interest producers would have in joining together to form some type of business cooperative to identify critical issues facing growers, and to obtain a basic understanding of the grower/marketer demographics. Seven questions were posed to producers including: a) what specialty crops were being grown, b) what county was their farm located in, c) what are some of the challenges growers currently face, d) current revenue, e) what percentage of net profit increase would benefit your business, f) would you consider working with other producers to improve profitability, g) growers were given the opportunity to add any additional comments. This survey was conducted at four producer/marketer conferences and meetings in January, February and March 2010 with a total of 48 specialty crop growers responding to the survey. Of the 48 total surveys, 27 were at the OPGMA conference, 10 at the OEFFA conference, 8 at the FMMN conference, and 3 at a chestnut growers meeting.

Respondents at each conference represented a cross-section of Ohio growers that are producing small and tree fruit crops, herbs, vegetables, cut flowers, honey and other categories such as green house, flowering plants, and mushrooms. Growers found five key issues that

were most challenging for their business, including: (1) time to commit to marketing, (2) insufficient product volume, (3) ability to meet distribution requirements, (4) high production, input, and/or labor availability and costs, and (5) insufficient cash flow in season. Of the respondents 25 out of 45 had current revenue from specialty crops totaling less than $50,000 per year. Eight responded that they had between $50,000 and $100,000 and 12 growers reported having annual revenue of more than $100,000. When asked the question what percentage of net profit increase would be needed to make it worth working together with other growers, most respondents (35 out of 48) thought that a 10-15% increase net profit would be needed. Growers responded that they would consider working with other producers to help improve their profitability by reaching new markets, adding value to existing produce, distributing product, and reducing input costs for labor, insurance, marketing and promotion, packaging, equipment and supply purchases, and employee training.

Additionally, feasibility study committee members were also involved in many site visits, discussions, and data collection activities concerning specialty crop local foods growing/marketing businesses. This includes over 35 site/group visits/meetings for cooperative technical support, representing approximately 250 growers. Of the 35 group visits/meetings, ten were with community group leaders who had major concerns for work force development and improving personal health issues. Based on early feasibility study results and expressed interest of the city/urban non-profit/faith-based groups for requesting support of OSU South Centers and the Ohio Cooperative Development Center, there was an expressed need for:

- Effective business models/plan development
- Business start-up, operation, and expansion financing options identification
- Employee-owned business model provision
- Business job/occupational analysis information identification
- Training strategies and program development facilitation

Specifically, the above expressed needs should be directed at the following direct marketing specialty crop business areas as identified in the study:

1. Field/greenhouse/high tunnel crop management/operation
2. CSA management/operation
3. Food store/farm market management/operation
4. Farmers' market management/vending
5. Value-added food processing management/operation

Developing a curriculum analyses (DACUM) sessions were conducted on the above five areas using over 35 subject matter experts. A task analysis process was also used to further identify steps, performance standards, tools, equipment, supplies, and materials, required knowledge and skills, safety concerns, work behaviors, decision, cues, and errors for CSA growers and managers. Basic/foundational skills were also identified using the ACT WorkKeys analysis process. The total analysis process was completed by the end of May 2011 and the information on the task and foundational skill analysis has been posted on the Ohio Cooperative Development Center (OCDC) website. The duty and task analysis information can be used to create trainee skills check off systems and to help develop course-of-study guides and

curriculum materials for training. A state-wide Non Profit Local Foods Network (NPLFN) cooperative has also formed a training and technical support committee and will use the material for their efforts. We believe the information obtained by the grant represents the most comprehensive and complete duty and task analysis list available anywhere for training program development. This will be invaluable for the development of training programs for the specialty crop business areas. Promoting growers and the supporting industries' supportive businesses could be accomplished through developing regional comprehensive training programs, sustainable incubator farms, business cooperative networks, and apprenticeship/mentor training programs. These regional efforts could be located near distressed communities to also serve the unemployed and underemployed, food deserts, part-time growers, and local consumers.

To meet the above needs, concerns, and development areas identified in the feasibility study, it was concluded that there is a strong need for on-going training, technical support, and provisions for collaboration formation support. This is particularly important for new and expanding businesses. OCDC has formally partnered with Ohio regional Extension Educators and statewide Extension Educator specialists to provide continued technical support for this industry.

Early best practices and emerging business structures were identified and reviewed. Representatives of these businesses were contacted to discuss these models, provide additional information, and answer questions about their operation. A report was developed and is included on the OCDC web site. Some early business models were identified in the following areas: (1) crop specific marketing/cooperatives; i.e. chestnut growers, apple growers, etc., (2) faith based/non-profit marketing/cooperatives which are mainly found in urban/city areas, (3) medium/large growers marketing/cooperatives contracting directly with a broker/distributer, (4) vertically integrated food systems involving growers, brokers, distributers, grocery stores, institutional buyers, and (5) direct marketing/cooperatives such as farmers' market, CSA's, and farmers' markets. Committee members participated in a USDA program which reviewed national models and preliminary findings from a survey of regional food hubs. The USDA Food Hubs Committee provided two PowerPoint presentations, "Understanding the Scope and Scale of Food Hub Operations," and a Regional "Know Your Farmer; Know Your Food" presentation that was developed by the food hub subcommittee.

To address the needs and gaps identified in the results of the *Cooperative Feasibility Study,* the following business and financial template plans were developed:

1. A business plan for an incubator 25 acre training farm
2. A financial spread sheet for a 25 acre incubator training farm
3. A financial spread sheet for a leased 50 acre, $10,000/acre, five member/worker-owner operational and start-up business models
4. A financial spread sheet for a leased 50 acre, $7,000/acre, five member/worker-owner break-even business model
5. A financial spread sheet for an owned 50 acre, $10,000/acre start-up business model
6. A financial spread sheet for an owned 50 acre, $6,875/acre start-up break-even business model

The “break-even” business models would be beneficial as not everyone is going to be able to sell their entire crop of 50 acres for an average $10,000/acre, therefore giving them the opportunity to see a plan of what it takes to still make it feasible could be useful. Obviously all of these financial projections are extremely variable depending on the cropping mix, weather, marketability, business structure, etc. If and when a business effort shows further interest in a particular business structure, crop selection, and the acreage being used to raise that crop, they can then develop a business plan and financial models using these templates for their particular needs.

The Ohio State University South Centers, Ohio Cooperative Development Center (OCDC) is a USDA funded center serving the local food industry, rural and Appalachia communities in Ohio and West Virginia, adjacent states, and nationwide groups based in Ohio. OCDC’s mission is to support improving economic conditions through the development of all types of cooperative businesses and “cooperative like” groups. OCDC is part of a business development, research, and extension education team to better provide comprehensive services for new and emerging cooperatives.

The OCDC provided over 1,850 hours of technical assistance for 22 groups and/or cooperatives from October 1, 2009 to September 30, 2011 that are related to the specialty crop industry. This technical assistance includes:

- One-on-One technical counseling
- Start-up formation kit provision
- Bylaws and board development counseling/workshops
- Business plan development assistance
- Business financial planning assistance
- Linkages to funding, grants, services, and resources
- Seed grants for start-up or implementation
- Development of incubator web sites
- Facilitation for cooperation among cooperatives
- Feasibility studies assistance

OCDC supported a total of 10 specialty crop business formations in the last two years. The OCDC accomplished this by investing 1,863 hours of direct client services, representing over 250 face-to-face sessions with 22 potential new and emerging cooperatives, and formal training for over 550 individuals annually.

Specialty Crops Related Business Formations:

- Non-Profit Local Foods Network Cooperative
- Route 9 Chestnuts Cooperative
- 6th Street Growing Community Gardens
- Holmes County Heritage Foods
- Fayette County Farmers’ Market Cooperative

- Gallia County Farmers' Market
- Black Swamp Local Food and Farm Cooperative
- Trauth Edible Landscape
- Shekinah Ranch
- Circle 77 Community Market
- Stone's Throw Market

Next Steps and Recommendations:

Growers found five key issues that were most challenging for their business, including: (1) time to commit to marketing, (2) insufficient product volume, (3) ability to meet distribution requirements, (4) high costs of production and inputs, as well as cost and availability of labor, (5) insufficient cash flow in season. Growers also responded that they would consider working with other producers to help improve their profitability by reaching new markets, adding value to existing produce, distributing product, and reducing input costs for labor, insurance, marketing and promotion, packaging, equipment and supply purchases, and employee training. To address the above concerns and to enhance economic development of specialty crop businesses, OCDC will work with local Extension Educators to build a partnership designed to assist with establishing new cooperatives and strengthening existing cooperatives with growers and related businesses. Currently this effort will involve 12 local Extension Educators and eight state-wide Extension and business development specialists and is scheduled to begin in October 2011. This partnership will be modified and expanded as needed by industry demands.

There was also an expressed need for the following items listed below in support of business development, education, and training needed to create a workforce and farms necessary to increase the production needed to locally supply specialty crops for individuals, institutions, and retail stores in Ohio:

- Effective business models/plan development
- Identification of financing options for business start-up, operation, and expansion
- Employee-owned business model provision
- Business job/occupational analysis information identification
- Training strategies and program development facilitation

Some of the above expressed needs are beginning to be met as a result of this grant's efforts; however, much more needs to done to adequately address these gaps. There needs to be a strong continuing effort to develop and implement business development, education and training materials and systems to meet this need. OCDC will work to continually address these areas and provide on-going training, technical support, and provide support for the formation of collaborations in the areas of specialty crop production, management, and marketing.