pennsylvania
DEPARTMENT OF AGRICULTURE

FY2009
Specialty Crop Block Grant Program
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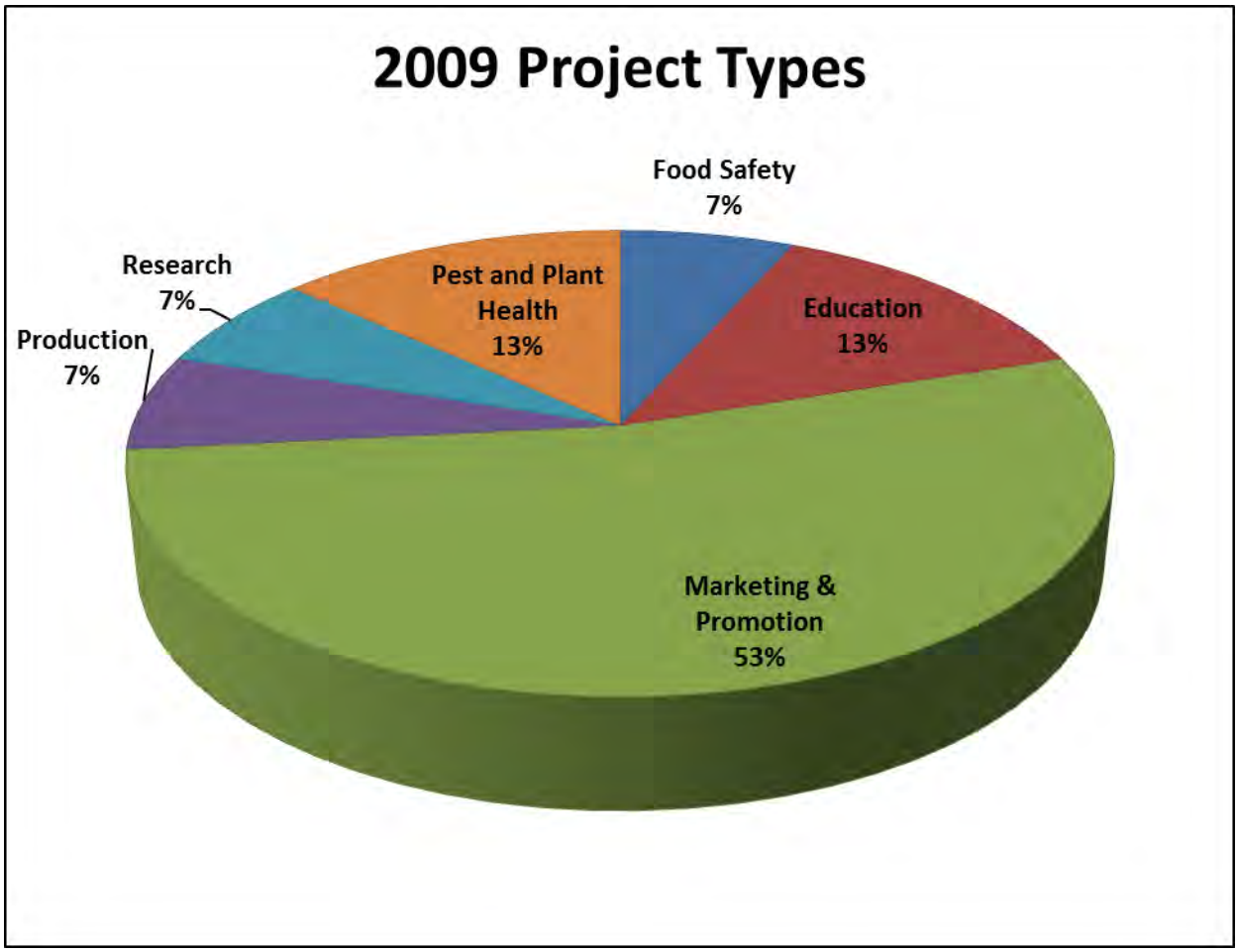
Background:	**FY2009 Pennsylvania Department of Agriculture Specialty Crop Block Grant Summary**
	In 2009, the Pennsylvania Department of Agriculture (PDA) was awarded $938,784.21 to promote the Specialty Crop industry throughout the state. Affirmative steps were taken to conduct state outreach to socially disadvantaged farmers and beginning farmers of specialty crops by PDA. Potential applicants were targeted through the Penn State University county extension offices, state and local associations, and the various USDA offices, to include FSA, NASS, RMA, USDA-RD and PDA economic development programs. The methods used to reach the targeted agricultural community included: press releases (300 PDA outlets, PR newswire service via the Governor's office) being sent to all above outlets, as well as, eight trade journals targeting producers throughout Pennsylvania, the state Agricultural Newsletter and other community newspapers. Presentation of grant round was included in the PA Fruit & Vegetable newsletter, mailings, and quarterly meeting. PDA received a total of thirty-six (36) specialty crop block grant applications. The grant applications were reviewed and prepared for presentation to the appointed specialty crop advisory board. The board members were invited based on their professional resumes, and ability to provide impartiality. A total of fifteen (15) projects were awarded funding. The projects included marketing and promotion, education, research and production. A final report for each project is listed below. 

Project Title:	**Food Safety in the Mushroom Industry, Project 1**
Project Summary:	Pennsylvania produces 65 percent of the nation's mushroom crop. Heightened consumer interest, coupled with requirements mandated by retail and foodservice customers, have led to increased food safety efforts by mushroom growers. This project expands and strengthens the industry-wide mushroom food safety initiative. With funding from a previous year's Specialty Crop Block Grant, the industry developed commodity specific Mushroom Good Agricultural Practices (MGAPs), held Worker Training Sessions, developed and produced Food Safety Materials to assist farms in implementing MGAPs, designed and implemented a MGAP program at a pilot test farm, and established a Food Safety Initiative Website (www.mgap.org) where materials can be accessed. Grower interest and acceptance of the food safety initiative surpassed the industry's greatest expectations. Responding to the results of a recent grower survey and important lessons learned at the pilot test farm, the goals of this project were to: (1) develop and provide additional training and updated materials through enhanced communications and outreach, (2) revise and update the 2008 edition of the Mushroom Good Agricultural Practices Standards and Guidelines for Mushroom Production, and (3) develop Standards for Good Agricultural Practices for specialty (non-*Agaricus*) mushroom production.
Project Approach:	*Update the Mushroom Good Agricultural Practices Standards and Guidelines:* A review session on MGAP revisions was held with 10 members of the Food Safety Task Force on January 15, 2010. The suggestions made were circulated to the full Task Force for their comments. On May 5, 2010, the full Food Safety Task Force met to review the MGAP changes and discuss future steps for the food safety program. The minor changes agreed to by the Task Force were incorporated into the MGAP documents on the Food Safety Website and distributed to MGAP auditors. On September 8, 2010 a meeting of the Food Safety Task Force and other interested growers was held to discuss future plans for MGAP, including a certification and verification program. Strengths and weaknesses of the MGAP program were discussed by the approximately 30 attendees. Attendees at these series of meetings represented companies that market approximately 80 percent of US mushroom production. *Development and Production of Updated and Additional Food Safety Materials:* In response to a problem with food safety training for new hires, an "Initial Hire" training sheet and commitment form were developed and distributed to growers. A "Train the Trainer" session on the initial hire training tool was held at Penn State University in June 2010 during the Mushroom Industry Conference, with approximately 75 industry members present. An additional Train the Trainer session was held in Kennett Square, PA in July with 20 attendees. The initial hire tool, with instructions on its use, was mailed to farms for all AMI grower members (approximately 100 farms), made available on the website and publicized in the *Mushroom News*. This tool, like all materials, is printed in English and Spanish. More information about the initial hire tool is outlined in the "Lessons Learned" section. The Food Safety Task Force provided guidance for a "user manual" for growers, suppliers and auditors to serve as a guidance document for the MGAP Standards and Guidelines. It also includes a list of "Frequently Asked Questions." The document is regularly updated. Additional food safety posters were developed in response to grower requests for food safety training areas of concern.

	Education and Train the Trainer: On May 6, 2010, a Train the Trainer session on implementing the MGAP program was held in Kennett Square, PA. It was conducted entirely in Spanish with approximately 45 participants. A train the trainer session was held in Kennett Square, PA on July 15, 2010 with 20 attendees. *Food Safety Website:* As new information and materials become available, they are posted on the website. For instance, during the timeline for this grant, the following were posted: • Initial Hire Training Kit • Updated Mushroom Good Agriculture Practices • New food safety posters In addition to new information and materials, an updated list of mushroom farms that have passed an MGAP audit is maintained on the website. *MGAP Notification Network:* In an effort to keep records current and insure all appropriate personnel at each farm are receiving information, a request was sent out to mushroom farms asking for names and email addresses. The list was expanded to 60 specific individuals with food safety responsibilities. A larger list of 200 individuals was created for more general food safety information. *Specialty Mushroom Good Agricultural Practices Program (S-MGAP):* A committee of specialty mushroom growers, along with Penn State faculty and food safety consultants, was formed to draft the S-MGAP. A tour was conducted in July 2010 of specialty mushroom farms. The committee developed flow charts for shiitake, oyster, and maiitake. A hazard analysis was conducted and compared with the MGAP to determine how it should be modified to be applicable to specialty mushroom production. The Committee reviewed these issues during a conference call on November 17, 2010. All of the above activities were conducted in coordination and cooperation with faculty from the Penn State University Food Science Department, the Penn State Extension Service, food safety experts (including those with expertise in managing a Hispanic workforce) and Pennsylvania mushroom growers, packers, shippers and service providers, including, but not limited to, the AMI Food Safety Task Force.
Goals and Outcomes Achieved:	This proposal built on the momentum and success of the introductory phase of the MGAP program to Pennsylvania growers. Continued development, industry-wide implementation and maintenance of a mushroom-specific, uniform food safety plan helps to maintain a safe food supply and the economic well-being of the mushroom farm community. The project was timely in that customers are increasing their food safety requirements; and during this time period, federal legislation was being considered that would require farms to implement good agricultural practices. Farm owners and managers now have a specific food safety program tailored for mushroom production. All mushroom workers are provided with consistent educational and training programs and materials that are user-friendly and readily available. Farms have the tools to successfully pass MGAP audits, lessening the need for multiple, generic audits and thereby saving money and time. At the beginning of this project, 12 farms in Pennsylvania had passed the USDA MGAP audit. As of June 2011, 40 farms had passed the MGAP audit. The overall performance measure and ultimate goal of this project is to help ensure that mushrooms continue to be a safe food product.

Specific outcomes included:

- Additional education and training materials focusing on documentation required for procedures and policies under the MGAP were developed. Working with Penn State, the Extension Service, and food safety experts, guidance and assistance was provided to growers for the documentation needs of MGAP audits in English, Spanish and bilingual formats.

- These materials were provided through on-going training sessions for owners, managers and supervisors to provide practical advice and tools to implement the MGAP program and communicate these lessons to their workers. Food safety is an on-going effort, requiring not only daily monitoring, but also a fundamental commitment to institute a food safety culture at the farm level. Therefore, continuing education and training sessions were held regularly.

- Additional Train the Trainer sessions were held to demonstrate use of the Food Safety Training Kit and the new Initial Hire training kit which highlights the 15 key training messages for new employees. A mandatory requirement of the MGAPs is worker training in food safety, sanitation and personal hygiene. A key finding was that farms needed a training tool for a worker's first day on the job. We have learned that the most efficient way to reach the largest number of workers is through the 'train the trainer' model. These sessions focus on initial training at hiring, refresher training and supervisor training.

This project provided coordination between Penn State faculty, U.S. Department of Agriculture staff, food safety experts and mushroom growers to update the December 2008 edition of the MGAP Standards and Guidelines document. The 2010 edition reflects changes in mushroom practices and addresses discrepancies and ambiguous issues discovered as farms began to implement the MGAP program and from lessons learned at the pilot test farm project.

The project also worked with private sector auditing firms to gain acceptance of the MGAP audit, giving growers a choice among auditors but still using the standardized MGAP Standards and Guidelines.

Progress was made in developing a commodity-specific good agricultural practices program for specialty mushroom (non-*Agaricus*) production and a comprehensive user-friendly audit that are universally accepted by customers, auditors and regulatory officials. However, time constraints and a limited audience hampered our efforts.

The website www.mgap.org, which is devoted exclusively to the mushroom food safety initiative, was expanded to allow easier access to the MGAP standards, guidelines, forms, templates, checklists, and the USDA MGAP audit, as well as food safety training materials. The majority of this information is in both English and Spanish, with some documents in a bilingual format. Improvements included making documents more user-friendly in both online and down- loadable formats. As the sole source of information about the MGAP program, this website continues to be an excellent resource to growers. In May and June 2011, www.mgap.org received over 100 visits.

The MGAP Notification Network was established to keep all mushroom growers, packers, shippers and suppliers updated with the latest food safety information. While introducing the mushroom food safety initiative and MGAPs to the mushroom farm community, we compiled an extensive list of individuals who need to be informed on a regular and sometimes urgent basis of updates, changes, and alerts on food safety issues. This would be accomplished through an email database, as well as regular mail, phone and fax contacts, as

	appropriate. Contact is made as often as necessary with new information or training materials. As shown by their enthusiastic response to the MGAP program, the mushroom farm community recognizes the necessity of employing rigorous food safety practices.
Beneficiaries:	There are over 70 mushroom farms in Pennsylvania with an estimated 9,000 employees. Farm gate sales of mushrooms in Pennsylvania totaled $487 million last year, with a much larger impact on the state's economy through related sectors. As shown in recent outbreaks of foodborne illnesses, the impact of a food safety concern can be devastating to producers and their communities. The mushroom farm community in Pennsylvania has made huge strides in a short time period to implement significant food safety programs. The MGAP audit is only the third commodity specific audit approved by USDA, and the only commodity audit that is national in scope. All partners – USDA, PDA, AMI, Penn State, and the Pennsylvania mushroom farm community -- will work together to build on this success. The continuation and expansion of this process will fulfill the mission of AMI to provide services to its membership, as well as the mission of Penn State to provide extension and outreach services to the constituents of the Commonwealth. Throughout the term of the grant, efforts were made to make public officials, regulators and the public more aware of the food safety programs being undertaken by the mushroom industry. Included are presentations at the Pennsylvania Farm Show, articles in local publications as well as *The Packer* and *Produce News*, and testimony at the May 13, 2010 public hearing in Harrisburg with the US Food and Drug Administration (FDA) officials responsible for drafting the Produce Food Safety regulations. These FDA officials subsequently toured several mushroom farm operations and monitored a MGAP audit.
Lessons Learned:	Group meetings involving those responsible for food safety from all levels – owner, managers, supervisors and employees – continue to be the most effective method of communicating food safety education and training messages. Each group contributes to the goal of establishing a food safety culture at the farm and packinghouse. It is also important to respond to needs that are recognized through on-farm experiences. The "initial hire" training materials were developed as a result of grower input: newly hired employees need immediate food safety training before they start work. The extensive employee training materials previously available required more staff time than was available, especially on small farms. Therefore, the initial hire poster, which outlines the 15 key employee training areas, script and commitment form, was developed, pilot tested and provided to growers. *Problems and delays:* Development of the Specialty Mushroom Good Agricultural Practices Program was delayed due to unforeseen time constraints on the primary author and a lack of interest from specialty crop growers. Tasks remaining include continued work on Specialty MGAP Standards and Guidelines, review by USDA and other regulatory officials, and introduction of the Specialty MGAPs concept to a broader specialty grower community.
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Project Title:	**Good Agricultural Practices Educational Program for Produce Industry, Project 2**
Project Summary:	The Pennsylvania Department of Agriculture recognized the necessity of employing rigorous on-the-farm food safety practices. Expansion of the Good Agricultural Practices (GAP) Education Program and the inclusion of cost share incentives helped maintain a safe food supply and the economic well-being of the agricultural community. The collaboration among government officials, University and industry experts ensured that the greater awareness and necessity of implementing on-the-farm food safety practices. Training occurred. A cost share incentive was offered to produce operations, which successfully passed a federal/state Good Agricultural Practices audit in 2010 and 2011. Qualified applicants received up to $400 per year for passing the federal/state audit for the first time, and $200 for passing an audit for the second or more years. A component of this project is the cost sharing support for successfully completed USDA Good Agricultural Practices (GAP) or USDA Good Handling Practices (GHP) audit annually. The program provides a maximum reimbursement of $400 towards one successfully completed audit per year. The reimbursement is designed to provide monetary assistance in support of the overall project #2 goal of increasing statewide participation in GAP/GHP audits. The activity is administered by the Pennsylvania Department of Agriculture through applications made available on its website (PDA GAP/GHP Cost Share Program) and through paper applications made available upon request, by auditors and at various trade shows.
Project Approach:	This extended and expanded program targeted the next level of growers, the earlier adopters. More in-depth training for growers to understand the requirements for the successful implementation of a food safety program on the farm is critical for Pennsylvania's produce industry. The Pennsylvania Department of Agriculture will work with educators and researchers from Penn State University and Delaware Valley College and industry representatives and experts in assessing further training needs and developing educational/training programs to meet those needs. Industry consultants may be used if the need is determined. The GAP cost share activity was approach by first offering the GAP/GHP cost share in 2008 less than 20 producers in Pennsylvania were participating in the voluntary GAP/GHP audit program. The program received 40 applications in the first year (2008) of the program and 81 applications in year two (2009). The advisory group, which included stakeholders from fruit, vegetable and mushroom growers associations assembled to address the cost share program recommended to set the cost share amount at a maximum of $400 to maintain a good return for producers and ensure funds would be available for the maximum amount participants. This decision was continued for the 2010 growing season. Enhanced focus on education and outreach as well as overlapping funding through the Specialty Crops Block Grant (SCBG) resulted in the conclusion of budgeting $18,000 for applications with any additional 2010 applications being funded through the following year SCBG. <u>Target:</u> The overall expectation was for approximately 95 applications in 2010 at a maximum reimbursement of $400. For the FFY 09/10 SCBG funding was anticipated for 45 applications (totaling $18,000) with the remainder of the applications to be funded through the FFY 10/11 SCBG. A total of 51 applications were funded, including 3 applications to assist producers and handlers completing audits in 2009 who were not able to meet the deadline for the FFY 08/09 and 48 applications to assist producers completing audits in 2010. The total dollar amount of reimbursements for this activity was $19,996.00 which exceeded the allotted amount by $1,996.00 and exceeded the anticipated number of applications to be completed by six.
Goals and Outcomes Achieved:	Advanced training was conducted on the successful implementation of a farm food safety program and the requirements necessary to pass a farm audit. Approximately 30 total people attended. Producers received training materials and information approximately 500 bundles of GAP flip charts, educational CD and posters

	were purchased from Cornell's GAP program. They have disseminated via educational trainings and as food safety inspectors visit sites. As far as the goal of 45 applications was exceeded for this grant award. An additional 28 applications were received for the 2010 growing season which would bring the total 2010 applications received to 76. Approximately 85 applications were anticipated overall for the 2010 growing season which would represent approximately two-thirds of the total number of audits (135) anticipated to be achieved as part of Project #2 overall goals. The participation tracks along similar lines to other cost share programs provided to the agriculture community in Pennsylvania by the PA Department of Agriculture. With a rich, often self-reliant agriculture heritage in Pennsylvania along with a robust Anabaptist community that for religious reasons cannot participate in these types of programs, the Department does not ever expect to receive applications matching the total number of eligible applicants and has numerous years of experience administering similar cost share programs. In regards to the 3 applications for 2009 audits, although submitted after the state established deadline it was perceived to be in the best interest of the promotion of the activity and the overall goals of the Project to reimburse those folks out of available funds from this grant. The excess use of funds in the amount of $1,996.00 was determined a best use of available funds given anticipated spending in other budget items relative to Project #2. It was decided in order to make the best and most complete use of available funds in a way that directly put the money in the producer's and handler's pockets. The overall rate of growth in participation in the program as it relates overall to GAP/GHP cost share activity of Project #2 appears to be reaching a plateau. It can be expected that every program moves towards a critical mass of participation even if growth is anticipated year over year. Further, the increased influence of retailers in determining the acceptable audit standards (anecdotally) appears to be moving producers to third-part auditors. The program under this activity and as written for the subsequent SCBG for FFYs 11/12 only provides funding for USDA approved audits. It may be prudent to begin the discussion of allowing GAP/GHP cost share funds to also provide reimbursement for these third-party audits as the producer or handler is often put in the position of needing these audits based solely on retailer expectations.
Beneficiaries:	The Pennsylvania producers who conducted anon farm good agricultural practices audit and passed. The increase number of participants should improve the overall safety of fresh fruits and vegetables being made available for consumers.
Lessons Learned:	The training was held during the week of Farm Show 2010. The concept was that many of the growers would be at the Farm Show and therefore it would be covenant for them to come to training. However, attendance was low and it was determined that actually many growers were too busy to attend training at the show. Outreach is critical, especially partnerships with specialty crops related organizations such as fruit growers and mushroom growers. Clear, easy to understand applications for reimbursement are key to participation. Also, this could have been two separate projects.
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Project Title:	**Microbial Survey of Pennsylvania Surface Water used for Specialty Crop Irrigation and Development of Sampling, Handling, and Shipping Procedures for Surface Water Testing, Project 3**
Project Summary:	Several recent foodborne disease outbreaks have been attributed to on-farm microbial contamination of fresh fruits and vegetables. National and regional grocery stores have reacted by requiring their produce suppliers to develop farm food safety plans and submit to third party farm audits and increased government oversight can be expected. Comments received during and after a March 2009 Penn State farm food safety workshop indicated a need to increase our understanding of microbial populations in Pennsylvania surface water used for irrigation. The purpose of this project was therefore to assess risks associated with irrigation water by conducting a microbial survey of Pennsylvania surface water sources used on Pennsylvania produce farms.
Project Approach:	Permission was granted from 33 produce growers in the south and south central region of Pennsylvania allowing us to survey their surface water sites three times during the summer of 2010. A summary of the microorganisms tested and information gathered at each site is shown in Table 1. Sampling procedures were based on calculated driving times necessary to limit the interval between sampling and analysis to no more than 6 hours, as specified in EPA protocols for microbial testing of surface water. Microbial and physical analysis was conducted by the graduate student funded in this project with the assistance of an undergraduate food science student at the Penn State Berks campus. Pennsylvania growers who use surface water for irrigating produce crops were identified from a follow-up survey to previous Good Agricultural Practices cooperative extension workshops. In order to be relevant to the beneficiaries of this research, attempts were made to following the water sampling protocol outlined by the USDA voluntary audit protocols which it was believed will be enforced on many of these growers in the near future. These protocols include sampling 3 times throughout the growing season, and analysis of water samples within 6 hours of the collection of the water sample. The choice of farmers to contact for participation in this program was based on calculated driving times from the analytical laboratory necessary to limit the interval between sampling and analysis to no more than 6 hours. Of the growers contacted, permission was granted from 33 produce growers in the south and south central region of Pennsylvania allowing us to survey their surface water sites three times during the summer of 2010. This sample size provided a much greater breadth of samples than in many previous surface water surveys found in our review of the literature. A set of standard operating procedures was developed which outlined project protocols for sample collection, microbial methods, recording observations, and data collection to standardized methods between all researchers involved. Water samples were collected at each site 3 times throughout the growing season. Each sample was tested for a number of pathogenic and non-pathogenic microorganisms as well as characteristics of the farm and water source, which are outlined in Figure 1. Non-pathogenic organisms were chosen to represent the organisms which are currently used to set standards for microbial testing, and pathogenic bacteria were chosen as the most likely bacteria to cause produce-related outbreaks. Microbial and physical analysis was conducted by the graduate student funded in this project with the assistance of an undergraduate food science student at the Penn State Berks campus. Results shown in Figure 1 indicate widely varying levels of microbial indicators in Pennsylvania surface water used for irrigation of fresh produce crops in 2010. Sixty seven (67) percent of the samples taken exceed the fecal coliform limit of 200 CFU/100 ml established in the Pennsylvania recreational water standards. If samples were evaluated against California leafy greens standards for generic *E. coli* in irrigation water, 57% would be in violation. The widespread occurrence of *E. coli* is of concern since it is an indicator of fecal contamination, and thus may indicate the potential for the presence of human pathogens. Initial testing for human pathogens

yielded many false positives that led us to re-evaluate our microbial methods to be used in the 2011 survey. These preliminary results, however, do show that that many of the water sources were accessible to domestic and wild animals and that some were from low-flow streams or still ponds, factors which might be linked to higher microbial populations. This survey must be replicated in the 2011 growing season for a more definitive analysis.

Statistics were run to determine correlations between any of the indicator organisms and characteristics of the water sources. Significant correlations were found between the temperature of the water source and the conductivity and the level of both fecal coliform and coliform in the sample. pH was seen to have the most consistent correlation to microbial levels, showing a correlation to all indicators except e. coli. To ensure that these trends are valid across a wider range of water sources, this survey will be replicated in the 2011 growing season.

Goals and Outcomes Achieved:

Each of our goals was achieved. Goals for year 1 of this project and actions taken to achieve each goal are summarized.

Goal	Activities to meet goal
1) Contact growers and extension educators through letters and off-season GAP training sessions including food safety session at 2010 Mid-Atlantic Fruit and Vegetable Convention.	Presentations on farm food safety standards were presented at extension grower meetings and at the February 2010 Mid-Atlantic Fruit and Vegetable Convention in Hershey, PA. Extension educators were trained on GAPs through a farm food safety In-service webinar held in May of 2010. Growers known to irrigate with surface water were contacted and asked to participate in the microbial survey to be conducted in 2010 growing season.
2) Conduct a literature review on food safety issues related to irrigation water.	A literature survey on existing recommendations or audit standards for allowable levels of microorganisms in irrigation was conducted.
3) Develop sampling and microbial enumeration techniques and protocols for collecting site location and environment data.	Known methods for chemical, physical, and microbial analysis of water were collected and materials and instruments for obtaining data were purchased.
4) Begin sampling during the 2010 growing season.	Sampling began in June of 2010 and continued through August. Water samples were collected and tested for microbiological organisms and physical characteristics at 33 farms between June and August of 2010.
5) Deliver information that growers can use to comply with farm food safety standards.	Individual grower results were mailed to each participant in September 2010.

Beneficiaries:

Produce growers who participated in this project were the immediate beneficiaries of this project. After the survey was completed, each grower was mailed the results of the microbial survey for their farm or orchard. An individualized letter was attached that explained how their results compared to existing irrigation water standards or recommendations. Anonymous results were included in the “Safety of Water” module within the “Keeping Fresh Produce Safe” GAP training workshops presented January through March of 2011. The larger population of growers in the Mid-Atlantic region benefited through presentations at extension winter grower meetings and the Mid-Atlantic Fruit and Vegetable Convention in Hershey, PA. Extension educators gained awareness of GAP water safety issues by participating in a Farm Food Safety In-service Webinar held in May of 2010.

Although the high failure rate for meeting water quality standards is a concern to growers, they will ultimately benefit if, through identification of a potential food safety risk, we focus our future work on finding practical methods to lower indicator microorganism levels in the future. They benefitted by becoming informed about the quality of the water they apply to their crops and therefore can take measures to minimize those risks possibly using the methods discussed in our GAP training.

As this is only the first year of a multi-year research effort, the potential economic impact of this project cannot be fully assessed. We anticipate though that by presenting preliminary results to growers, we have raised awareness of the need for them to start documenting microbial levels in surface water sources used to irrigate fresh produce. By doing so, time and resource burdens placed on growers as a result of the inevitable transition to stricter farm food safety will be lightened.

Sixty seven (67) percent of the samples taken exceed the fecal coliform limit of 200 CFU/100 ml established in the Pennsylvania recreational water standards. If samples were evaluated against California leafy greens standards for generic E. coli in irrigation water, 57% would be in violation. The data shows that, under global and new FDA farm food safety standards, these growers would not be permitted to use surface water for their crops, and thus would be forced out of wholesale market channels.

Lessons Learned:

A broad survey such as conducted in this project yielded valuable information that has increased grower awareness on farm food safety issues. From these preliminary results, we learned that many growers will find it difficult to meet established microbial water standards for crop contact irrigation water. Despite high levels of coliforms, fecal coliforms, and *E. coli*, we could not confirm the presence of human pathogens in any samples using standard microbial plating techniques. A correlation between microbial indicators and pathogens cannot therefore be made at this time. Thus it appears that many growers will fail to meet these standards despite actual evidence of human pathogens. These standards will no doubt continue to be used until technological advances are made that will permit rapid, accurate, and low cost testing for actual human pathogens. In the interim, given the increasing scrutiny of regulators and commercial buyers on farm food safety, and in particular the potential for water contamination of crops, we feel that additional research may be necessary to explore cost effective ways for growers to reduce indicator microbial levels prior to irrigation.

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Additional Information:

Table 1. Types of data collected at each sampling site.

Microorganisms	Physical characteristics	Observations
Microbial indicators	pH	GPS Coordinates
Generic E. coli	Air temperature	Farm Size
Coliforms	Water temperature	Crops grown/irrigated
Fecal Coliforms	Turbidity	Type of water source
Enterococci	Conductivity	Upstream use
Enterobacteriaceae	Dissolved oxygen	Depth at intake
Human pathogens		Precipitation previous 72 h
E. coli O157:H7		Water movement
Yersinia enterocolitica		Algae growth
Salmonella spp.		Nearby animal activity
Shigella		

Figure 1. Populations of microbial indicator organisms

Project Title:	**Pennsylvania Wine Quality Initiative, Project 4**
Project Summary:	The PWA sought to improve the quality of Pennsylvania wines through training and testing by the PA Wine Quality Initiative for the wine industry. The objective of this two year initiative was to increase the quality of Pennsylvania wines through training and testing by the Pennsylvania Wine Quality Initiative and to provide educational support for the wine industry. The Pennsylvania Wine Quality Initiative (PAWQI) was established to train sensory panelists and winemakers to identify wine faults. The training and testing provided in the PAQWI has aided in creating a consistent quality image of Pennsylvania wines. Through the development of

	the PAQWI, Pennsylvania wines are being promoted as meeting and/or exceeding a minimum quality standard, helping in the promotion of Pennsylvania wines. The PAWQI services were designed to help to the many newer wineries, as well as the established wineries in identifying common wine flaws and faults through sensory training. Furthermore, this ability to identify faults and education on prevention and remediation has led to the production of higher quality wines.
Project Approach:	The PWA looked to increase the quality of Pennsylvania wines through training and testing by funding the PA Wine Quality Initiative, which trained nearly thirty individuals in sensory evaluation to identify common wine flaws during the period of this grant. The total number of trained individuals reached a total of over 70. After two short course sensory training session, one full training session and two two-day evaluation sessions the results were collected compiled. An effort was made to determine if a correlation existed between a greater number of tested wines that receive favorable evaluations and a greater number of individuals who had been trained to detect flaws. The number of favorable wines increased as more winemakers are trained to detect flaws, displaying a positive correlation between increased training and a reduced incidence of flawed wines in the market. The average pass rate during this reporting period was over 80%. This rate included some wine samples that we not yet bottled and were submitted in order to determine if corrective action was necessary – a key component and tool for the stakeholders to use to their advantage to ensure fault free wines are put on the market. When looking at only the commercially available wines (taking out tank and/or barrel samples), the passage rate exceeds 93%.
Goals and Outcomes Achieved:	The Pennsylvania Wine Quality Initiative (PAWQI) has conducted multiple sessions during this grant period. This included two two-day evaluation sessions where nearly 120 wines were evaluated during February 2010 and March 2011. During these evaluation sessions, award winning wines from the PA Wine Competition were evaluated in addition to samples submitted by participating wineries. The evaluation of PA Wine Competition medal winners was conducted again as a test to determine the potential rate of awards given to wine determined to be faulty by a trained and evaluated panel. Additionally, two short course sessions and one full training session were offered in April 201, June 2010 and April 2011 where nearly thirty individuals representing over twenty wineries were trained. The two short course sessions served as introductions to detection, prevention and correction of wine faults conducted as part of the Pennsylvania Winery Association's Annual Meeting. Twenty-two industry members attended these short course training sessions, which brings the total number of individuals attending a PAWQI training session to nearly 70. At both sessions, panelists were shown the olfactometer in Dr. John Hayes' lab. The PAWQI is working in collaboration with Dr. Hayes to adapt this technology to wine specific aromas in an effort to improve speed and efficiency of panelist training. Additional training was undertaken by the PAWQI's interim administrator, Mario Mazza, to utilize additional functionality of the Compusense software package used at the Penn State Food Science Department's Sensory Lab. The level 2 training he participated in focused on advanced techniques, such as Feedback Calibration Method (FCM), which can be implemented to help improve the speed and effectiveness of the training being offered to panelists. The PAWQI purchased equipment essential to the continuing the sensory evaluation process. Two olfactometers from Sensory Sciences, LLC will continue to be used for rapid panelist training. One device was fitted with standard wine aromas for use as part of the training methodology for those participating in the PAWQI panelist training sessions. The second device was fitted with specific wine fault aromas that again will allow for rapid training and familiarization of common wine fault aromas. Members of the PAWQI in collaboration with Penn State University's (PSU) Food Science Department extension enologist have worked to develop a custom set of aromas for use in both the olfactometer and cards with encapsulated aromas (similar to scratch-n-sniff). Both of these devices supplement and augment the already established training protocol

	conducted at PSU's Food Science Department. Additionally, these devices and cards are capable of being used in mobile training arrangements by PSU's extension enologist.
Beneficiaries:	At the beginning of the project there were approximately 130 wineries. Pennsylvania currently has more than 150 wineries. Many of the new wineries have had the opportunity to participate in the sensory evaluation classes and learn about wine flaws. Additionally, at least thirty participants in the wine sensory evaluation process were from established wineries. In turn, those wineries were able to take their new found knowledge and apply it to their winemaking, as well as share their experience with fellow winemakers. Results and experiences from the program were also presented to a group at the American Wine Society in November of 2010 in an effort to both promote the program and its goals as well as educate AWS members about the potential benefits of such quality initiatives. Throughout the duration of the grant approximately fifty people, primarily wine industry personnel, were trained to in sensory evaluation through the PAQWI.
Lessons Learned:	The PAWQI has been able to gain further momentum; however, the goal to hire an enologist to further foster and execute the initiatives of the program was delayed. The State Enologist was hired in May 2011, therefore setting back several goals. The intended goals were achieved, but at a later time frame than anticipated. The session has been revamped and will include not only training on detection of wine defects, but also training on term generation of wine attributes. The revised session format will allow for 24-36 participants (previously limited to eight). The Level 2 Wine Sensory and Quality Enhancement session will focus on proper identification and communication of various wine sensory attributes. This will increase the industry member understanding of individual wine attributes and facilitate clear communication about them. The ability to properly identify and communicate about various wine attributes (not only defects) will enhance industry member's ability to evaluate and improve wine quality in both individual and cooperative situations. Discussion is ongoing on how to streamline and most effectively utilize the analysis sessions to maximize wines that can be evaluated in a reasonable amount of time. Key factors involving timing of submissions and how to most effectively convene a trained panel on a more regular basis for sample evaluation.
Contact Person:	Pennsylvania Winery Association, Jennifer Eckinger, 411 Walnut St., Harrisburg, PA 17101, Telephone: 717-234-1845, Email: jeckinger@pennsylvaniawine.com
Project Title:	**Protection of Specialty Crops in Pennsylvania from High-Risk Pathogens, Project 9**
Project Summary:	The goal of this project was to enhance the capability of the Pennsylvania Department of Agriculture (PDA) to detect and manage high-risk pathogens, especially exotic pathogens, so that the production and marketing of specialty crops could be adequately protected from such pathogens. Besides direct crop losses, disease outbreaks increase costs for plant care, and chemical-based protective measures negatively affect surrounding terrestrial and aquatic ecosystems. Especially, infestation of exotic pathogens incurs huge indirect costs due to required regulatory actions and marketing disruption and restriction. If history is a guide, the movement of exotic pathogen species and variants of indigenous ones will likely increase due to rapidly increasing global trade and human travel; their movement exacerbates the emergence of new diseases and reemergence of quiescent ones. This project was built on a project supported by SCBGP-FB in 2009 (ME4408695). The nature of main problems we encountered in 2009 and 2010 had a few differences. One main disease problem during 2009 was late blight on tomato (caused by Phytophthora infestans), but this disease was not a big problem in 2010. Detecting and responding certain pathogens, such as P. ramorum and chrysanthemum white rust, occurred in both years. Building on a previous project contributed to reducing the steepness of the learning

curve and the initial investment needed.

Project Approach:

As of November 2010, we have detected 173 pathogens on 1,261 samples. Some samples were submitted by growers, but most of them were collected by PDA plant inspectors and Penn State Extension specialists. The percentages of biotic, unconfirmed-biotic, and abiotic diseases among these samples (collected from 277 different hosts) were 42%, 22%, and 36%, respectively. Among the samples exhibiting biotic diseases, 42%, 24%, 15%, and 19% were collected from greenhouses, nurseries, garden centers, and other (field, forest, orchard, plantation, residence, and vegetable transplants), respectively. The following 22 pathogens are diagnosed to have caused 50% of the total biotic diseases:

Pathogen distribution, detected in Pennsylvania in 2010

Pathogens	Distribution, %
Botrytis cinerea	7.0
Impatiens necrotic spot virus (tospovirus)	6.6
Virus, family not yet determined	3.6
Chrysomyxa weirii	3.0
Rhizoctonia solani	2.6
Tobacco mosaic virus	2.6
Oidium sp.	2.4
Phaeocryptopus gaeumanni	2.4
Pythium sp.	2.4
Puccinia horiana	2.3
Fusarium sp.	1.9
Gymnosporangium juniperi-virginianae	1.7
Xanthomonas axonopodis pv. *poinsettiicola*	1.7
Potyvirus group	1.5
Phytophthora infestans	1.3
Rhabdocline pseudotsugae	1.3
Stigmina lautii	1.3
Phytophthora sp.	1.1
Tubakia (actinopelte) dryina	1.1
Alternaria sp.	0.9
Clavibacter mich. subsp. *michiganensis*	0.9
Diplodia pinea	0.9
Other (51 pathogens)	49.5

Goals and Outcomes Achieved:

Project meetings have been conducted mainly though phone and e-mail as well as a few visits to PDA by PI Kang or to Penn state by collaborators at PDA. The following subsections summarize our work and accomplishment:

(A) Newly emerging routes of marketplace-borne pathogen spread: Consignment plant sales through big-box retail stores have contributed to recent plant disease crises in Pennsylvania and other Northeastern states. Notably, we have frequently identified tomato late blight and chrysanthemum white rust in these retail settings. Commingling of diseased and healthy plants occurs during plant delivery and maintenance, resulting in rapid and wide spread of disease. PDA and USDA-PPQ inspections and "Stop Sale" regulation have done little to mitigate this problem. Further preventive efforts including education, communication, and regulation are urgently needed.

(B) Tomato Late blight: A special survey was conducted in 2010 to detect the inoculum sources of P. infestans,

	the causal agent of tomato late blight. PDA plant inspectors inspected vegetable seedling-producing greenhouses in the spring, prior to shipment to retail outlets. Samples of tomato seedlings were collected from each establishment and submitted to the Plant Disease Diagnostic lab. Seedlings were repotted and held in a greenhouse under a mist irrigation system to an attempt to induce early disease expression. A total of 300 samples were collected from 80 different wholesale/retail growers in PA. Although we failed to detect late blight in this survey, late blight was reported in three commercial greenhouses in western PA in late May. Plant Inspectors were immediately notified and action was taken to minimize any further spread. No late blight epidemic occurred in PA this year. **(C)** Overwintering of Chrysanthemum White Rust: In the past, chrysanthemum white rust typically occurred in September in PA. However, the disease symptoms appeared in April – May in 2010 on plants overwintered in open fields. The trace-back investigations indicated that those infected plants were originally exposed to chrysanthemum white rust in 2009. **(D)** Phytophthora ramorum surveys: A total of 138 samples comprised of 30 different hosts including soil samples were analyzed for the presence of P. ramorum using molecular diagnostics protocols validated by APHIS. These samples were collected from the P. ramorum confirmed nurseries, special national investigations, and trace-forward samples in 2010. All samples were P. ramorum negative. **(E)** Collection of Phytophthora isolates and their characterization: We have processed 1005 samples to isolate Phytophthora spp., from which 169 cultures were stored in 2010. Cultures isolated on PARP were inoculated to V8-200 media and hempseed water for long-term storage. A total of 91 randomly selected PA clinical Phytophthora isolates were characterized using DNA sequences at the ITS (International Transcribed Spacer regions of the ribosomal RNA encoding genes) and compared with characterized species and/or isolates in the public genetic database. Fourteen Phytophthora species were identified with P. cryptogea being the most common species. The sequence data of the cultures will be archived in the public database (www.Phytophthoradb.org) hosted by Penn State University. **(F)** Tomato bacterial canker, Clavibacter michiganensis subsp. michiganensis (Cmm): In PA, the disease has been a chronic problem and causes serious crop losses in greenhouses, high-tunnels, and fields. Contaminated seeds usually give rise to apparently healthy seedlings, and plant inspectors and diagnosticians fail to detect the diseases on tomato transplants. The disease symptoms become apparent when the infected plants approach maturity. For the disease control, the common recommendations are to use the pathogen free seeds and transplants, but the sources are not available. Four clinical samples with symptoms of bacterial canker were submitted to PDA in 2010. Cmm were isolated and identified based on cultural characteristics as well as using a recently published species-specific real-time PCR method. **(G)** Diagnostic tool development: The gene sequence-based diagnostic method for Rhodococcus fascians, a bacterium that infects a wide range of plants, was fully evaluated using natural and artificially inoculated plant samples at PDA. Newly developed real-time PCR primers and probes, targeting the plasmid-borne fas-1 gene, were successful to detect and quantify R. fascians in plant samples. This was the first RT PCR-based diagnostic assay that allowed specific detection of virulent strains of R. fascians from plant materials. This method can be used for screening clinical samples from greenhouses and offers significant advantages over current detection techniques based on pathogenicity test. In total, 117 strains isolated from 42 different kinds of flowering crops in Pennsylvania greenhouses during 1984 – 2010 were confirmed to be R. fascians by this method. Geraniums and speedwell were most common hosts. Previously unknown hosts of R. fascians included Ajania pacifica, Anemone sp., Aruncus sp., Baptisia sp., Eutrochium maculatum, Helianthemum sp., Lewisia sp., Monarda sp., Osteospermum ecklonis, Rudbeckia nitida, and Saponaria ocymoides. These results are being written as a peer-reviewed publication. DNA-based molecular diagnostic methods were evaluated for detection of chrysanthemum white rust. Two sets of RT PCR primers and probes published by two different labs were tested with DNA samples isolated from PA clinical samples. One of them found to be more sensitive for detection and confirmation of chrysanthemum white rust. However, both methods exhibited a very low sensitivity in detecting P. horiana inside plant tissues, requiring futher optimization to deploy for routine

	diagnosis of clinical samples. Development and evaluation of diagnostic methods for Xanthomonas vesicatoria is still in progress and requires further research before releasing to the public. **(H)** Review of currently available diagnostic tools for Phytophthora: To support the utilization of molecular diagnostics tools, a very comprehensive review of currently available molecular diagnostics tools, relevant references, and the sequence alignments used to develop PCR-based diagnostics tools was conducted, and results were posted to the Phytophthora Database (http://www.phytophthoradb.org/diagnostics.php). Topics reviewed included techniques for molecular identification of isolates to a species level (sequence and PCR-RFLP based), identification of subpopulations within a species (e.g., RFLP, SNP, RAPD, AFLP, SSR, and mitochondrial haplotype analysis) and molecular diagnostic techniques for identification of pathogens at a genus and species level. The development of micro- and macro-arrays for identification of isolates to a species level was also reviewed. The predominant loci used for developing diagnostic markers (rDNA-ITS, elicitin, beta-tubulin, Ypt1 ras-related protein, and cox1 and 2 spacer) and their sequence alignments were provided to simplify development of new species-specific markers by users of the database.
Beneficiaries:	The project's primary beneficiaries are Pennsylvania's specialty crop industry and individual growers. The knowledge and data resulted from this project also benefited PDA by supporting its mission of safeguarding the economic security and sustainability of agriculture in the state. Specific examples of benefits include: (i) Early detection and accurate identification of potentially highly destructive pathogens enable rapid deployment of regulatory and/or management actions, which will lead to eradication of such pathogens at affected sites, implementation of appropriate disease control measures, and/or prevention of further spread. (ii) A database that contains genotypic and phenotypic data from pathogen collections analyzed through this project will serve PDA in a way similar to what the forensic DNA database does for the federal and state law enforcement agencies. It will permit a rapid risk assessment of a newly isolated pathogen and will also assist in recognizing patterns of pathogen movement/change. Especially, the data derived from various *Phytophthora* species archived at PDA contributed to establishing a very comprehensive database for the whole genus (www.phytophthoradb.org). This database now has more than 400 registered users from 50 different countries and has facilitated the identification and description of new species. The sequence data have also helped us develop and validate new molecular diagnostic tools.
Lessons Learned:	(i) As observed in previous years, many pathogens detected this year are associated with propagation materials that are in transit such as seeds, transplants, rooted cuttings, or container-grown plants, highlighting the importance of monitoring plant materials imported to the state. (ii) *Phytophthora ramorum* has not been detected outside of a few affected nurseries. (iii) Coordinated and persistent educational and regulatory efforts are needed to minimize marketplace-borne pathogen spread. (iv) We need to continuously monitor the nature and changing profiles of pathogens introduced to the state. It is also critical to archive the genotypes and phenotypes of previously characterized pathogen isolates in an easily accessible manner so that these reference data can provide a critical insight into how pathogen communities are structured and have changed in the state.
Contact Person:	Seogchan Kang, Professor, Department of Plant Pathology Penn State University, University Park, PA 16802, Telephone: 814-863-3846 E-mail: sxk55@psu.edu
Additional Information:	**General Distribution List of Publications:** 1. Kim, S. H., Olson, T. N., Peffer, N. D., Nikolaeva, E. V., Park, S.-Y., and Kang, S. (2010) First Report of Bacterial Spot of Tomato Caused by *Xanthomonas gardneri* in Pennsylvania. Plant Disease (Note) 94: 638. 2. An, Y., Kang, S., Kim, K.-D., Hwang, B. K., and Jeun, Y. C. (2010) Enhanced defense responses of tomato

plants against late blight pathogen *Phytophthora infestans* by pre-inoculation with rhizobacteria. Crop Protection 29: 1406-1412.

3. Kang, S., Mansfield, M. A., Park, B., Geiser, D. M., Ivors, K. L., Coffey, M. D., Grunwald, N., Martin, F. N., Levesque, A., and Blair, J. E. (2010) The promise and pitfalls of sequence-based identification of plant pathogenic fungi and oomycetes. Phytopathology 100: 732-737.

Communications:

1. Kim, Seong H. 2010. The 2009 Tomato and Potato Late Blight Crisis: The Interaction of the Urban Home Garden and Commercial Agriculture—What Went Wrong and What We Learned: Perspective of the crisis from the state regulatory inspection service. Phytopathology 100:S161.
2. Kim, Seong H. 2010. Overwintering of chrysanthemum white rust in PA. 17th Ornamental Workshop on Diseases and Pests. Kanuga Conference Center. Hendersonville, NC. September 20 - September 24, 2010

List of All Personnel Associated with the Project:

Dr. Seogchan Kang, Professor of Plant Pathology at Penn State
Dr. Seong H. Kim, Adjunct Professor of Plant Pathology at Penn State and Plant Pathologist Supervisor at PDA
Tracey N. Olson, Plant Pathologist at PDA
Dr. Ekaterina Nikolaeva, Research Associate at Penn State
Dr. Hyeseon Kim, Postdoctoral Fellow at Penn State
Bongsoo Park, PhD candidate at Penn State

Project Title:	**Controlling Tomato Diseases; encouraging the adoption of biological fungicides and bactericides to meet the demand for organic and sustainably produced tomatoes, Project 6**
Project Summary:	There are a number of strains of Bacillus subtillus (Companion, Rhapsody, Serenade….) that have been indicated as potential control for tomato leaf and fruit diseases. The greatest problems with these relatively new materials is in determining what product to use when, how often to reapply, what level of control can be expected and the other variables that can usually be found relatively easily for commercial chemical products. We evaluated currently labeled tomato biological disease controls plus those nearing final labeling in order to develop effective recommendations for commercial and consumer growers.
Project Approach:	Seven disease control treatments were applied to two varieties of commercially grown tomatoes. Each treatment block consisted of 5 each Scarlet Red cv. and 5 each Primo Red cv. plants with a yellow fruiting type between to facilitate harvest differentiation. Each treatment was repeated 4 times using a randomized block design. Disease control treatments: 1) Water: This was our control to provide a benchmark for general levels of local disease pressure. 2) Conventional (Chorothalonil + Copper alternated with Chlorothalonil + Tanos): This is a good conventional grower standard fungicide treatment which we used to compare our biological / biorational control against. 3) Copper: For many organic growers, this is the primary fungicide / bactericide. 4) Vermicompost Tea: The Fertrell Company, Elizabethtown, PA supplies many local growers with the active cultures for this product. Fertrell's technical staff supported and trained us in the production and application of this product which is used by many Amish and Mennonite producers in the Lancaster Area. 5) Regalia alternated with Copper: Regalia is an extract of Giant Knotweed that has been shown to activate several of the plants pathways that help to prevent disease. Copper was included based on research from Cornell that indicated the need to bolster the bactericidal control. 6) Actinovate alternated with Copper: Actinovate is a Streptomyces product that is commercially sold as a

	biological disease control. Copper was included as in #5. 7) Stimplex alternated with Copper: Stimplex is a seaweed extract that has been shown to activate several of the plant pathways to prevent disease as well as hormone-like effect that stimulates plant growth. Copper was included as in #5. The planting was installed in early June at the Penn State Southeast Research and Extension Center (SEAREC). Disease control treatments began 4 weeks later. The first harvest was on 8/20/10 and harvests continued until 9/30/10.
Goals and Outcomes Achieved:	Initial project results were shared with 84 growers at the vegetable growers' twilight meeting at SEAREC on August 5, 2010. Due to the nearly complete infection of the trial with Bacterial canker, the results are a little difficult to analyze. This disease is the single greatest challenge to Mid-Atlantic growers even when compared to Late blight as there are no effective controls once a plant is infected. All of the plots averaged within 2% of each other in marketable yield except for the Actinovate and Copper treatments which significantly out produced the nearest treatment. Actinovate + Copper yielded just over 10% more marketable fruit than copper alone. In addition, the Stimplex and Regalia treatments began creating substantial new growth near the end of the season while most other treatments were collapsing under the weight of disease present. It will be very interesting to reevaluate these treatments under less plant stressful conditions.
Beneficiaries:	Pennsylvania Vegetable Growers, industry associations and related organization benefit from this information. The rapidly expanding numbers of high tunnel tomato producers and organic tomato growers (field and tunnel) needed this type of study as their options for disease management were severely limited. Conventional high tunnel growers could not use two of the most common fungicides (mancozeb and chlorothalonil) as they had long PHI's and high phyotoxicity on tomatoes under plastic. Introducing them to Regalia (Giant knotweed extract) and Stimplex (a seaweed extract) has had a major impact as they now have effective disease management with zero PHI and REI, thus allowing them to grow better tomatoes and still be able to harvest and work their crop without excessive waiting time. Many are reporting using this same program in the field with good results. For organic growers, the addition of Regalia and Stimplex has greatly expanded their field and under plastic disease control program options. I work with approximately 3,400 vegetable growers in PA and speak to audiences throughout the Mid-Atlantic and Midwest on tomato production. I believe that it is safe to say that this project has easily impacted over $20 million worth of tomatoes to date. Since our last hard numbers for high tunnel producers are from 2005, I am making a conservative estimate based on meeting numbers.
Lessons Learned:	The single greatest challenge to the project this season was the extremely hot and dry weather. While the low humidity limited fungal disease development, the extreme heat encouraged the development of Bacterial canker throughout the trial due to an infected block of tomatoes nearby. This turned to be useful as there was substantial differentiation between the treatments in controlling or slowing the development of Bacterial canker. The other challenge resulted in the trial getting planted 2 weeks later than originally planned due to excessive moisture in the soil slowing the preparation of the planting beds.
Contact Person:	Steve Bogash, Regional Horticulture Educator, Penn State Cooperative Extension, 181 Franklin Farm Lane, Chambersburg, PA 17202, 717-263-9226 ext 230 FAX 717-263-9228
Project Title:	**Implementation of a Sustainable Viticulture Program for and with the Grower-Owners of National Grape Cooperative, Project 7**
Project Summary:	There are increased concerns about food safety and environmentally sound food production practices. Surveys show growing interest in how and where food is produced. That concern is now being manifested at the retail and wholesale levels where our products major purchasers are demanding products produced under

	sustainable production practices. In Pennsylvania, the third largest Concord grape producing state in the U.S., National's vineyards are located along the Lake Erie shore. This region has a unique microclimate that enables efficient production of the highest quality grapes. National Grape Cooperative and Welch's recognize the need to produce grapes in a sustainable manner. North East, Pennsylvania, is the home of Welch's largest receiving, processing, and production facility. It produces approximately 75% of Welch's total sales volume, employs 460 people, and has an economic impact of $150 million a year. It is important for every National member in Pennsylvania to complete the Vine BALANCE Workbook because it establishes specific action plans to address those high-risk areas that will lead to improved sustainability, impacting National's and Welch's ability to be a preferred supplier in the U.S. and abroad.
Project Approach:	Pennsylvania's National Grape members were interviewed on a one on one basis to complete the *Vine BALANCE* workbook, *Sustainable Viticulture in the NORTHEAST* (www.vinebalance.com). This educational tool contains 134 questions with four risk categories from low (1) to high (4). Within each of the four categories there are specific identified practices. Grape producers rank their practices (1-4) for each question. The producer comes up with a cumulative score to determine the beginning baseline. They can then determine the highest risk practices and develop action plans to address them. Key areas include: • Soil management to reduce runoff, erosion, and leaching and improve soil health • IPM techniques used to identify and improve pest management of insects, diseases, and weeds while reducing pesticide use • Nutrient management practices to reduce runoff • Pesticide storage and handling procedures that secure pesticides and protect workers and handlers • Use of new pesticide application techniques that minimize the potential for environmental contamination • Vineyard floor management techniques that conserve water and nutrients • Canopy management techniques that enhance fruit quality and reduce pest pressure • Continuing education and action plan The self-assessment and workbook completion was voluntary, but highly recommended. It is a fairly involved survey encompassing many facets of viticulture and the decision making process involved. Members spent on average approximately two hours with the program implementer conducting the interview and completing the workbook. Another one to two hours was spent tabulating data and developing action plans identifying the

	highest risk practices so the grower could address them. Follow up discussions educating the producer on how best to address these action plan items are also included in this time allotment. We also were able to conduct a second interview with many of the growers who completed the workbook. This purpose of this interview was a follow up to see if the grower did address any of the action plan items set forth after the initial completion of the workbook. We are happy to report that in the time frame set forth we were successful in our ability to conduct follow up interviews and respondents had addressed at least one of the action plan items identified. This shows a commitment on behalf of the grower to sustainability as well as its importance in their farming operation. They are committed to improving food safety and the critical resources around them that makes that happen.
Goals and Outcomes Achieved:	Outlined are the main objectives and their corresponding timelines during of this project: 1. Hire and train the person (implementer) who will be responsible for interviewing project participants (growers) as well as completing the *Vine BALANCE* workbook, *Sustainable Viticulture in the NORTHEAST* (www.vinebalance.com). The program implementer was successfully hired by 3/1/10 and was trained by 3/31/10 to begin the outreach portion of this program. 2. Send out the initial communication to the growers. The first communication was sent to producers on April 20, 2010. 3. National members were interviewed and will complete the *Vine BALANCE* workbook and adopt at least one action plan. Our goal was to have 90% of the growers and acreage completed by September 2011. We got off to a slow start in year one of the project due in part to state budget concerns and the voluntary nature of grower participation. Once we got that behind us and the word spread amongst the membership we were able to complete initial interviews with 100 members representing 5800 acres of Concords and Niagaras in Pennsylvania 4. Adoption of one specific action plan item to address a high risk area. Our goal was to have 65% of the growers and acreage completed by September 2011. Of those initially surveyed, we were able to conduct follow up interviews and 90% of those members had adopted one specific action plan item. This improved their baseline score, thus improved their level of sustainability. Throughout this grant process completion of the *Vine BALANCE* workbook has been on a volunteer basis. Since completion of this grant, National Grape is making it mandatory for all members to complete the workbook by the 2012 harvest. We are currently in the process of making that happen with the remaining memberships who have not completed the workbook yet. We are working cooperatively with the Lake Erie Regional Grape Program's extension educators to offer continuing education and assist producer adoption or improvement of more sustainable, lower risk production practices.
Beneficiaries:	Beneficiaries included 150 National Grape members representing 7700 acres in Pennsylvania that are affected by the implementation of this project. The communities of North East, Harborcreek, Erie, Girard, Lake City also benefit from this project because it helps to ensure that the agriculture community is good stewards of the land and protecting the air, water and land resources around them to preserve these communities. Practicing sustainable viticulture makes producers better stewards of the environment – air, water, and land resources – by utilizing environmentally and economically sound practices. This helps to preserve the local communities that depend on grape production to be successful. Improving the sustainability of these farms

	will have an impact on farm workers as they will have lower exposure to pesticides. The environment will be improved through better fertilizer management; there would be less runoff into Lake Erie. Successful sustainable grape farms would increase the tax base in communities and help to preserve their rural character. Because of increased consumer demand for sustainably grown products, we expect that this will lead to an increase in market demand which will lead to expanded grape production in the region. We are nearing the day where 100% of National Grapes membership and acreage is documented that it is produced in a sustainable manner and producers are continuing to improve their operations by adopting production practices that increase their level of sustainability.
Lessons Learned:	The Lake Erie Grape Region including National Grape Cooperative's Pennsylvania membership are leaders in adopting sustainable viticulture practices including no till row middle management, Integrated Pest Management (IPM) practices that relies on scouting in determining whether insect and / or disease thresholds have been met or exceeded prior to making treatment decisions. Many growers are sometimes uncomfortable with volunteering information concerning their decision making and cultural practices in their operations and are slow to agree to conduct interviews where they must that information. Once they did sit down and go through the workbook they agreed that it wasn't as bad as initially thought and they are doing many of the practices that are recommended and recognized as sustainable. They are in a favorable position when it comes to sustainability and many of the action plan items are tweaks in their operations, not whole sale changes. There may have been increased grower participation in the time frame set forth in this grant if participation and completion of the workbook was made mandatory sooner.
Contact Person:	Robert Smith 2 South Portage Street Westfield, NY 14787
Additional Information:	Workbooks are available at; http://www.vinebalance.com/about_workbook.php
Project Title:	**PLNA Sustainable Landscape**
Project Summary:	The new green ethic is encouraging changes to agricultural practices across Pennsylvania. Many of these changes affect water quality through efforts such as the increased focus on the health of the Chesapeake Bay, air quality, public health and safety, and ecosystem health. The new green ethic is also creating new markets for specialty crops including nursery stock and floriculture crops. We have seen new markets emerge in recent months, particularly for the use of green infrastructure to reduce storm water runoff to improve water quality in the Chesapeake Bay. Pennsylvania is under a federally-mandated Watershed Implementation Plan (WIP) that calls for improvements in non-point source contributions to nitrogen and phosphorus getting to the Chesapeake Bay. Green infrastructure has been shown to be an effective and cost-effective means of reducing urban stormwater runoff that contributes to Bay pollution. The design, installation and maintenance of these green infrastructure systems is not widely understood by landscape professionals. The purpose of the project is to create a manual for the use of professionals in the design, installation, and maintenance of these systems, leading to greater use of nursery and floriculture crops. The Pennsylvania Landscape and Nursery Association (PLNA) was able complete the writing of the manual and the exam. Due to staffing and budgetary cutbacks the project was unable to be completed as initially written. The remainder of the project will be handled using PLNA funds.

Project Approach:	The goal of this project was to increase the use of nursery and floriculture by local governments, commercial entities and homeowners in the development of green infrastructure projects that will have an impact on water quality in Pennsylvania rivers and streams. This will be measured by the total square footage of green infrastructure projects (rain gardens, bioswales, riparian buffers, green roofs, etc.) implemented by those receiving certification under the grant. We will benchmark this by giving those applying for certification a pre-exam survey and follow up with and post-survey one year after they take the exam. We expect a 75% increase in the square footage of areas planted by these professionals using nursery and floriculture crops as a result of their increased knowledge about how to design and install green infrastructure projects.

Project Activity	**Who**	**Timeline**
Develop RFP to hire contractor to develop training manual and certificate program.	PLNA Staff	Completed in early June 2012, (1-2 days). Delayed due to staff shortages.
Retain green infrastructure consultant.	PLNA Staff	Started in June 2012
Create draft manual and certification program.	PLNA Staff, members and consultants	1 months
Review draft manual and certification program.	PLNA Staff, members and consultants	1 Week
Publish electronically manual and certification program	PLNA Staff	Completed September 2012
Market manual and certification program.	PLNA members and staff	To begin January 2013 with first exams in February 2013, through December 2013.
Administer pre-exam survey instrument	PLNA Staff	Ongoing between February 2013 and December 2013.
Administer post-exam survey instrument	PLNA Staff	Ongoing between February 2014 and December 2014.

Goals and Outcomes Achieved:	We were successful in getting the manual and testing exam developed. We were one year late due to staff shortages at PLNA. We will begin to market the program and begin testing in 2013. The measurable outcomes were not measured because this measurement was to be done with PLNA funds. Due to the recession and the housing market crash (on which our industry is very reliant), PLNA has had to reduce staffing and the pace of the project was slowed. Please refer to the timeline in the report for our projected completion dates.
Beneficiaries:	We expect 100 landscape professionals to take the certification exam during 2013. Primary beneficiaries will be the nurseries growing specialty crops, i.e., native trees, shrubs and perennials used in the green infrastructure projects implemented by those taking the exam and doing sustainable landscaping work. Secondary beneficiaries will be those using the water resources of the Chesapeake Bay.

Lessons Learned:	Considering that the project did not successfully complete its proposed Work Plan or Measurable Outcomes, we learned that an organization can't implement a project in a timely manner when that organization experiences a reduction in staffing by 50% during the project period. We also learned that it is difficult to engage stakeholder involvement when the industry is in the midst of the worst economy anyone has experienced in their lifetimes. People are focusing on keeping their businesses running and have time for little else. We sent drafts of the manual to many stakeholders who had a direct interest in the project at several key points in its development to solicit their feedback, but received only one substantive comment in return. We also learned that interest among landscape contractors in sustainable landscapes and certifications is low, due in part to economic conditions. Few have interest or time to learn new techniques, even though these new techniques could open new business opportunities for them. There were no unexpected outcomes. We also learned that a recession can significantly cut back the staff and the funds necessary to complete grant such as this. The landscape and nursery industry is very reliant on housing and with the housing market crash, PLNA and our industry was affected severely.
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Project Title:	**Direct Farm Sales**
Project Summary:	The Direct Farm Sales Program was conducted by the Pennsylvania Department of Agriculture's Bureau of Food Distribution. The Bureau was responsible for managing the application process, determination of grant qualifications, and the execution of monetary awards. The Bureau was also responsible for verification of individual project completion, collecting data pertaining to outreach and reporting information to Pennsylvania Department of Agriculture Bureau of Markets. The grants were awarded to farm stands, farmers' markets, government units, and non-profit organizations that manage and operate farmers' markets located in Pennsylvania. All grantees completed and submitted an application by the established deadline. The program operated from March 1, 2010 through September 30, 2010. There were a total of 75 applications for the 2010 program of which 32 were awarded grant funds. Each application was evaluated on the following criteria: The potential to increase consumption of Pennsylvania grown specialty crops, preservation of farmland and promotion of agriculture; the readiness for the applicant to complete the project; potential for the market to assist in revitalizing a community; location of market in an underserved area; potential to provide increased access to farmers' markets by program (FMNP) participants; number of people served and the overall performance of the project. The project issue was to provide fresh, locally grown specialty crops to low income Pennsylvania citizens, while expanding the number of outlets, the awareness, use of and sales at farm markets and farm stands to build positive behavior for eating more nutritious food to reduce the incidence of hunger and under nutrition in Pennsylvania.

Project Approach:	Once notification of funding has been received a notice is announcing the opening of the mini grants is published in the Pennsylvania Bulletin, several farming newspapers, and published on the Departments website. Proposals received during the open grant period were reviewed by a committee. Each committee member scored each application independently. Team member scores were totaled for each application and then ranked in order of their total scores. The 32 highest scoring applications were awarded grants. All applicants are notified as to whether they were funded or note. A press release was then completed announcing the grant awardees. Once projects have been selected for funding all budgeted line items are reviewed to ensure that each line item is allowable and will result in the increase of specialty crops. Funds are only dispersed after projects have submitted receipts. Receipts are compared to the approved project budget to ensure only allowable costs are reimbursed. In some cases, non-specialty crop items have indirectly benefited from completion of some of the projects. Allowable costs are determined using the specialty crops federal regulations and consulting with Pennsylvania's Specialty Crops Block grant administrator. The mini project costs cover, advertising and other promotional costs, nutrition education materials, staffing cost associated with the project, signage directing people to the market, website development to advertise the market and goods available for sale, and market tables, tents, bins, etc used to display and protect specialty crops for sale. At the end of the grant period all grant awardees complete and submit an evaluation report. The results from those reports can be seen below.
Goals and Outcomes Achieved:	The goals and outcomes that were achieved by each grantee are listed separately below. 1. The Conshohocken Farmers Market hired an experienced vendor manager and an equally experienced promotions manager to operate the market. The Conshohocken Farmers Market operated from May through September. The vendor manager contacted numerous vendors to participate in the market and identified problems with vendor solicitation. The market dropped to one anchor vendor despite efforts to attract other regular vendors. Approximately 10 vendors participated in the 2010 market season with three of the vendors attending on a regular basis. Seven other vendors attended the market once or twice during the season. The promotions manager arranged 2 special Saturday markets for those who could not attend the regular Friday market. Both days were as successful as the Friday markets. 2. Risser- Marvel Farm Market advertised their fruits and vegetables, purchased shopping baskets, and wooden display baskets, offered a one day farm stand at the Lebanon, PA WIC office with another planned for October. 3. The Food Trust established a farmers' market in the Grays Ferry community. This is a low-income neighborhood where nearly half of the residents live below the poverty level. They advertised in the local newspaper, through their website, and newsletters. The best form of advertising was through door-to-door flyering and word-of-mouth and relationships established with the local government and concerned citizens group. Nutrition educations materials like healthy eating brochures and seasonal recipe cards were provided. 4. The Boyertown Farmers Market promoted its participation in the FMNP and SFMNP to local civic organizations, especially Boyertown Area Multi-Service and The Salvation Army. At the market they advertised the FMNP and SFMNP vouchers are accepted by several vendors through highly visible a-frames. Further promotion was accomplished with informational literature at the above listed institutions and listing on their e-newsletter. The market saw an increase in the number of voucher redeemed from only 8 in the year 2009 to

43 redeemed in the year 2010.

5. The Beaver County WIC clients were able to find markets easily, learned how to make use of the FMNP checks, and found the recipes were very helpful in getting clients to try new vegetables and eat healthier. Instead of handing out produce bags at the WIC client recipients received a coupon to take to the market to pick up their free bag. This was a good way of getting the recipients to the market to use their FMNP checks. 392 bags were distributed. A new market was also established in New Brighton which is a low to medium income community next to a Family Dollar store. The location worked very well. The market was able to expand the number of cooking demonstrations and the types of demonstrations conducted. Brochures were distributed to show consumers how to dry, can, freeze and preserve vegetables for later use.

6. Main Street Mount Joy's project objective was to utilize grant funds to maintain and increase the number of stands, increase the number of market customers and sales per stand as a result of increased advertising exposure; infuse new energy into the 9-year old market. The market attracted 6 new vendors, but lost two long time vendors due to crop problems because of the drought and one changing its focus to a CSA.

7. Old Gregg School Farmers Market's goals were to increase the number of farmers and customers. Both of those goals were met. Increasing the FMNP participation was another goal, which was not met.

8. The hiring of an assistant manager for the Easton Farmers Market helped them implement an EBT program at the market which increased sales by $10,000. By attracting the EBT customers the market also saw an increase in the redemption of FMNP checks. The grant funds were also used for the markets website development which resulted in a 25% increase in website visits.

9. Oyler's Eden Valley Farms goals were to increase the number of people eating Pennsylvania grown apples, increasing the access of FMNP participants to farm via advertising and signage, and to help revitalize the community.

10. The goal of Opportunity Farmers Market was to improve the customer base of the farmer's market in the City of Reading through relocation and increased use of the internet. Sales were steady despite the hot dry summer; however hours will probably be reduced next year because of the significant drop in the number of customers after 2pm.

11. The goals of the Fisher Farmstead We'll Produce It and Teach you to prepare it project were to reach out to single parents and educate them on healthier eating with fresh fruits and vegetables.

12. The goal or the Eastern Market Outreach project was to enhance access to fresh, Lancaster-grown foods in the underserved neighborhoods of southeast Lancaster City. Two new satellite markets were created with products appropriate for a Latino Market.

13. The goals of Farmers on the Square project were to implement and EBT machine at the market, develop and implement creative marketing strategies for better advertising the market, and to recruit a strong market volunteer base and coordinate their service to the market.

14. Harvest Moon's expansion project allowed them to grow more varieties of plants with better production, provided informational fliers, and participated in a local elementary school event.

15. The Mansfield Growers Market goals were to provide fresh local produce for the community, provide a

retail outlet for 19 local farmers, and educate the community about local agriculture, and nutrition. The market also completed and advertising campaign which brought in many new customers.

16. The Bath Farmers Market used the grant funds to expand promotional efforts for producers and the market. Other goals were to increase the number of farmers selling at the market and increase the number of customers visiting the market.

17. Love 'n Fresh Flowers project goals were to purchase supplies to create a professional retail experience, attend a new farmers market, expand outreach efforts, and create a successful direct sales strategy. All of the goals were met and exceeded expectations. In particular, the Love 'n Fresh Flowers display at the new Mt. Airy farmers market was a key anchor that has helped this market gain customers throughout the season.

18. Ellwood City Farm Market used food demonstrations as a promotional tool to demonstrate how to use local produce to prepare recipes quickly and easily. Attendees were also taught how to select the right produce and where to purchase the items.

19. The Dig It! Youth Farm stand project had a total of 15 at-risk/special needs youth participate in the project. The youth grew 2,000 pounds of produce, learned workforce readiness skills by selling the produce at 4 different locations in Lancaster.

20. The Lititz Farmers Market incorporates local FFA students into their market. This has resulted in the students working on farms and pursuing Agriculture careers at the collegiate level. The market also used the funds for marketing and outreach activities.

21. North East Farmers' Markets goals were to promoted local agriculture and the economy, make locally grown produce available and affordable to low income families and the elderly, promote local small farm business and to draw consumers to downtown North East. The market achieved all of the goals.

22. Adams County Farmers' Market Association's goals were to promote and launch a new farmers' market at The Outlet Shoppes at Gettysburg and promote the increased consumption of fresh fruits and produce using a community partnership program.

23. Bedford Farmers Market used the grant funds for an advertising campaign which resulted in a larger group of potential visitors to the market. The increase in visitors to the market resulted in an increase in sales.

24. Sugartown Strawberries farm market created new signs, purchased new tents and canopies, which attracted more customers to the market.

25. The Hawley Farmers Market posted new signs at both ends of town, improved the ground where the market is held, and used an advertising campaign to increase community awareness of the market. The market met all of the project goals.

While the goal of increasing FMNP checks redeemed throughout the state was not accomplished many of the projects funded did increase the redemption at their markets over the previous year. Due to these grants some awardees actually began accepting the FMNP checks with favorable results. We did not achieve our goal of having 100 grant applications for this year's program. We believe this was due to the time period in which the grants were due. The time frame will be changed next year to allow time for more entities to apply. Since

we do not know how many of the projects had PAPreferred vendors prior to the start of the project we are unable to determine the number of PA Preferred vendors that were new as a result of the grants.

All projects contained under the Direct Farm Sales Grant program achieved the following outcomes:

1. Approximately 70,839 consumers and farmers benefited from having these grant projects completed. This number is less than last year because we had a smaller number of projects that were funded.

2. There were 98 PA Preferred produced benefitted from the Direct Farm Sales Grant Program. This is an increase of 6 producers over last year.

3. The majority of the grant recipients felt that accepting the FMNP checks helped to bring in new customers. Some grant recipients were not eligible to accept the FMNP checks because of the program regulations.

4. Approximately 12,418 FMNP checks were accepted by Direct Farm Sales Grant Projects this year. This is a decrease from the previous year. This could be due because different markets were supported with the grant funds this year.

The majority of the grant recipients would participate in the program again. Some of the comments received from the grantees included the following:

1. The program is an excellent means to ensure that fresh fruit and vegetables are available to low income residents of Conshohocken.

2. The Direct Farm Sales Program allows The Food Trust to continue its mission to increase access to fresh, nutritious and affordable food, especially in underserved locations such as Grays Ferry, while supporting Pennsylvania farmers.

3. The availability of locally produced foods is critical to the Old Gregg School community. Even though there are many farmers, most sell in an urban market far from the local community. The funds from this grant allow the market to provide fresh, local, healthy food for the residents of the area.

4. For the Easton Market securing funding for strong management and website promotion remain pivotal to the growth of the market and long term sustainability of the EBT program. They believe that EBT and FMNP sales will continue to grow each year.

5. The Fisher Farmstead looks at the number of new customers from the advertising and the increase in their FMNP voucher's as a measure of evaluating the effectiveness of the grant. It gets their name out into the community to build a larger customer base. It also has held educated the community for "Buy Fresh, Buy Local" as well as healthier life styles from eating healthier.

6. The Eastern Market project gave the organization the chance to learn more about low-income ethnic markets. The program itself helped the organization to identify areas in which significant attention needs to be paid in the future as well as build relationships with new partners.

7. This program allows for better accessibility to fresh products, encouraging vendors and consumers alike to consider farmers' markets as a viable venue for food purchases.

Goals or outcomes that were not achieved as well as lessons learned by grant recipients are listed below.

	1. In order for the Conshohocken Farmers Market to remain viable efforts must e made to increase attendance through a variety of vendors. The Borough has learned the importance of having an anchor prepared food vendor, which is necessary both to secure other vendors and increase attendance. Because the market lost its prepared food vendor many office workers did not visit the market. 2. The Old Gregg School farmers market did not meet to goal of teaching farmers how to participate in the FMNP because it was not made a responsibility of the market manager. Instead volunteers tried, but were not successful in accomplishing this goal. 3. Oyler's Eden Valley Farm did not meet the goal of increase access of FMNP participants to the farm because they waited until harvest season began to remember about applying for the FMNP. Because of the busy time of year they simply ran out of time to apply. 4. One of the goals of the Mansfield Farmers Market was to benefit a local food pantry. Because the market is on Friday and the pantry is only open Wednesday they were not able to donate left over produce directly to the pantry. The food pantry distributed $1 coupons to families based on need, which could be redeemed during the last half hour of each market day. 5. The Dig It project lost produce due to drought conditions this year. One of the markets they attend also went through a major renovation this year which prevented them from selling at the location for the entire year. 6. The Lititz Farmers Market achieved their goals, but they are experiencing a problem with over saturation of markets and farm stands in the area, which is making it difficult to grow their customer base. Since the market is only an hour away from major metropolitan areas vendors are choosing to take their products to the metropolitan areas where they can command higher prices. 7. The Adams County Farmers' Market association experienced unforeseen challenges such as road construction, slow economy, inconsistent vendor attendance at some market locations and lack of niche vendors did affect some market sales in spite of increased advertising and implementation of new programs. 8. Hawley Farmers Markets project worked so well that they have outgrown their location and need to find another location that will allow additional vendors who have applied to sell at the market. Note: There were three projects which were not completed this year for a variety of reasons which include: lack of match funds, did not have time to complete the project, and the slow economy. The projects did not receive any specialty crops block grant funds since they did not submit any receipts for reimbursement.
Beneficiaries:	Individual grantees listed above.
Lessons Learned:	Note: There were three projects which were not completed this year for a variety of reasons which include: lack of match funds, did not have time to complete the project, and the slow economy.
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Project Title:	**Use of High Tunnel Technology on Vacant or under used Parcels of Land in Philadelphia to Produce and Market Nutritious Fruits and Vegetables Year Around while Promoting Economic Development, Workforce Training and Youth Empowerment**
Project Summary:	The purpose of the project was to incorporate the use of high tunnel technology for the production of fresh vegetables, small fruit and flowers into urban agriculture in the City of Philadelphia to help eliminate the food deserts that exist in the city and help support Mayor Nutter's promise of fresh produce within walking distance of the population of the city. In additional we looked to create jobs and provide educational opportunities/ hands on experiences for members of the local community and students, and to reconnect the urban populations with their food supply
Project Approach:	To accomplish this we (personnel from Penn State University and Penn State Cooperative Extension Office) partnered with four separate community based organizations in Philadelphia to assist with the purchase and construction of high tunnels and to provide training on the production and operation of these high tunnels. Five high tunnels have been constructed so far: a 30 foot wide by 60 foot long high tunnel located at SHARE Food Program, on 2901 West Hunting Park Avenue; a 21 foot wide by 48 foot long high tunnel at Grumblethorpe Museum and Farmstand, located at 5267 Germantown Ave.; a 30 foot wide by 48 foot long high tunnel with Teens for Good at 8th and Poplar St., on land owned by the City's Parks and Recreation Department; and the fourth and fifth high tunnels both 21-foot wide by 96 foot long were erected in partnership with the Heritage Farm, off of City Ave. at the old Methodist Center for Children. That completed the five high tunnels scheduled under this project. The high tunnel at SHARE Food Program utilizes raised beds and has been growing collards, lettuce, and other assorted greens as well as tomatoes, peppers and eggplants that are being sold at a mobile market located on site. The other high tunnels have been producing and marketing a wide variety of nutritious vegetables and fruits to the local communities that they serve. The produce is being marketed to local communities via farmer's markets, CSA's (Community Supported Agriculture), corner grocery stores, restaurants and food stores. We have already seen the potential for the winter production of selected vegetables, especially greens at the SHARE Food Program site. We are confident that fresh greens and root crops can be harvested throughout the winter months in the City of Philadelphia. The amount of exposure that the high tunnel project has received is tremendous due to the visibility and traffic at the various sites. This project involving the introduction of high tunnels dovetailed nicely into the larger Urban Farming Initiative by Penn State in Philadelphia. Each of these sites is employing or educating young people and members of the community in the production of fresh vegetables, small fruits and flowers using high tunnel technology
Goals and Outcomes Achieved:	We reach our goal of training the growers and other community members associated with each of our partners, SHARE Food Program of Pennsylvania, Teens 4 Good, Grumblethorpe Museum and Farmstand, and the Heritage Farm on the construction and the operation high tunnels for the production of fresh and nutritious fruits and vegetables that can then be marketed to the community via a wide variety of marketing outlets. During the construction of the high tunnels, several workdays were organized where persons interested in learning more about high tunnels were encourage to participate in the construction process and ask questions about the use of high tunnels in the urban area. In addition, several T.V. stations and print reporters in the Philadelphia area did news segments and articles on these new high tunnels at the sites which provided great a lot of positive public exposure for partners, Penn State University, Penn State Cooperative Extension Office in Philadelphia, Pennsylvania Department of Agriculture, and United States Department of Agriculture Specialty Crops Block Grant which provided the funding that enable this project to move forward
Beneficiaries:	The primary beneficiaries of this project were our partners where the high tunnels were erected. They are now producing produce for sale or for distribution to the local underserved communities they work with and even extending the growing season to have fresh local greens and root crops throughout the winter months. The high tunnels are like a wheel with spokes that reach out into the communities with fresh produce, opportunity

	for training and educational opportunities for youth and adults, employment, and ability to reconnect the urban populations with their food supply. It is also a great start to combating obesity and childhood diabetes, which is both a national health and security issue. The beneficiaries are in the thousands as our partners spread the knowledge to their constituents and clients purchasing the product. The greatest benefit has been the increased availability of specialty crops (fruits and vegetables) to clients in food deserts. It has provided economic stimulus to both the partners and those assisting in the production of the products. Moreover, the communities have begun to seek out high tunnel operations and want to purchase product from sites, building support for eating healthy.
Lessons Learned:	One of the biggest lessons learned is that we need to work with the City of Philadelphia's zoning and permitting officials. The use of high tunnels in the city is totally new to these departments and we need to work with them, using information gained from other metropolitan areas such as Cleveland, Ohio to ease the process so that it is not so cumbersome and overbearing. Every metropolitan area is facing similar issues when it comes to urban ag and the introduction of high tunnels into the farming mix. We believe that it can be worked out over time. We also see the need for a full-time horticulturist with the Philadelphia Cooperative Extension Office to provide support and training to the urban agriculturists, especially those utilizing high tunnels.
Contact Person:	Dr. William James Lamont Jr. ,Professor of Vegetable Crops, Department of Horticulture 206 Tyson Building, Pennsylvania State University, University Park, PA 16802 Phone: 814-865-7118, E-mail: wlamont@psu.edu
Additional Information:	Forums~Urban Sustainability Forum- "High Tunnels: A Sustainable Solution for Local Urban Agriculture" presented by Dr. Lamont at the Academy of Natural Sciences of Drexel University, Feb. 15, 2012- 250 attendees. Publications~ Lamont, Bill. 2011. "Penn State Helps Build Philadelphia High Tunnels" Vegetable Growers News. Vol. 45 No. 12 p. 46-47. Penn State AgScience Magazine, Winter/Spring 2012-"High Tunnels in the City", p.11. Websites: Articles on this project http://www.philly.com/philly/gallery/128849774.html http://articles.philly.com/2011-09-01/news/30029171_1_high-tunnels-volunteers-solar-greenhouse http://www.farmanddairy.com/news/high-tunnels-to-aid-philadelphia-based-agencies-schools/32062.html http://extension.psu.edu/philadelphia/news/spotlight/penn-state-high-tunnels http://ttfwatershed.org/2012/02/22/high-tunnels-a-sustainable-solution-for-local-urban-agriculture/ http://vegetablegrowersnews.com/index.php/magazine/article/penn-state-helps-build-philadelphia-high-tunnels http://vegetablegrowersnews.com/index.php/magazine/article/penn-state-helps-build-philadelphia-high-tunnels http://seedstock.com/2011/11/29/penn-state-high-tunnels-urban-farming/

http://greenlimbs.com/are-high-tunnels-pie-in-the-sky/
http://philadelphia.cbslocal.com/2011/08/16/north-philadelphia-food-organization-gets-its-second-high-tunnel/
http://phillyfoodjustice.wordpress.com/2011/12/13/shares-high-tunnels-for-year-round-production-of-vegetables/
http://extension.psu.edu/philadelphia/news/2011/penn-state-extension2019s-high-tunnel-alliance

Teens for Good High Tunnel-visit by
Lela S. Reichart, Division Chief, Bureau of Market Development, PA Department of Agriculture on far left, Dr. Lamont Penn State University, Henry (works for Teens for Good), Jamie McKnight, Director Teens for Good and Heather Zimmerman, Penn State Cooperative Extension Office Philadelphia

We appreciate our partnership with the Pennsylvania Department of Agriculture and the USDA Specialty Crops Block Grant and look forward to seeking additional funding for this project in the future.

Project Title:	**Fayette County Food Shed**
Project Summary:	This project promotes and improves the access to locally grown fruits and vegetables and processed produce for distribution to local farmers markets, local restaurants, community supported agricultural farms, and area public schools. This was accomplished via the establishment of an overarching Local Economy Initiative; its primary objective focuses on efforts to rebuild our local food system and promote sustainable agriculture. Our initial request for SCBGP fund was $150,000. We were not able to receive that amount but we did receive $18,000. In return we had to down scale the Fayette County Food Shed project. The major problem was that there were no farmers markets in Fayette County so that meant that we needed to find a way for the residents and consumers to be able to get access to fresh and locally produce fruits and vegetables. We focused on development of four (4) farmers markets. This gives us the best opportunity to promote specialty crops. Fay-Penn began to work on the development of the Fayette County Food Shed Project on January 1, 2010. We hired a person for the staffing position of Sustainable Communities Specialist. Part of that person's responsibility was to develop the Farmers Market Program under my supervision. During this time, we began to identify possible locations for four farmer's markets as well as possible key stakeholders in each of the communities. The real motivation was when we got local stakeholders involved in the site location and development of the market. That person met with each of the stakeholders in the community and together identified the exact locations. A couple of the communities had places in mind, while others did not. The sites ultimately chosen were the communities of Ohiopyle, Uniontown, Masontown, and Connellsville with alternative area locations of Brownsville, Fairchance and the Fayette County Fairgrounds. The real challenge we found was choosing the dates and times specific to the needs and wants of each community, while giving each community their own

	day for optimal selling opportunities, if possible. The markets were therefore held as follows: 1. Downtown Uniontown Farmers Markets — July 1st – Sept. 3rd 4:00 pm to 7:00 pm 2. Masontown Farmers' Market in the Park — June 25th – Sept. 2nd 3:00 pm to 7:00 pm 3. Connellsville Farmers and Art Markets — July 3rd – Sept. 4th 8:00 am to 1:00 pm 4. Ohiopyle Country Markets — May 29th – Sept. 4th 2:00 pm to 6:00 pm This was the start of the Fayette County Food Shed Project, and this was the first grant from the Specialty Crop Block Grant Program.
Project Approach:	Working with the producers at the markets, we feel that the average consumer spent $7.50 per visit which means that the total sales per market day average $562.50. We averaged 75 consumers at each of the farmers markets. We have been able to also educate the consumer on the value of buying their produce from local farmers, both on a nutritional and economic standpoint. We were fortunate to receive $20,000 from the Fayette County Tourism Fund to aid in our efforts. These Tourism Fund dollars enabled us in our marketing and promotional programs as well as billboard, newsprint, radio, and TV advertising. Fay-Penn also established the Fayette County Buy Local Campaign at this time, and was able to further promote our four farmers market through this campaign. We were fortunate to partner with our local newspaper, The Herald Standard, to develop a local newsletter. The newsletter was inserted into the paper on the third Sunday of each month. They also established a radio show (Locally Yours) on WMBS which is the local AM radio station. The show is every Friday from 11:15am to 12:00noon. We are working with Penn State Extension to identify and develop more farmers for the markets in the future. Fay-Penn also drove consumer traffic by using the Fayette County "Buy Local Program." This was done by offering the first 25 customers at each of the farmers markets a $5.00 voucher that could be used towards their purchases at the farmers market that day, just by presenting us with their Buy Local Cards.
Goals and Outcomes Achieved:	One major goal was to establish four (4) farmers markets. 1. Downtown Uniontown Farmers Markets 2. Masontown Farmers Market in the Park 3. Connellsville Farmers and Art Markets 4. Ohiopyle Country Markets The second major goal was to educate consumers on the nutritional and economic standpoint. We averaged 75 consumers that we were able to educate daily at each market. One of the outcomes is developing more farmers to grow produce locally and be able to sale the produce directly to the consumer. This will take a number of years to develop these producers. We are working with Penn State Extension to identify and develop more farmers for the markets in the future. In the future, we would like to have four to five farmers at each of the markets. We have one producer that attends all of the markets that had more than seven products items to sale. Throughout this close-out report we have established four (4) farmers markets. We average at less three (3) producers per market. We have reached out to an average of 75 consumers per market 300 per week. • Developed four (4) farmers markets • Averaged there (3) producers per farmers market

	• Averaged 75 consumers per farmers market • Development of a newsletter that was inserted in the local newspaper that promotes the farmers markets to 25,000 local resident who read the paper We have developed and distributed a newsletter that promotes the farmers markets. It has a circulation of 14,000. It targets citizens in Uniontown, and Connellsville in Fayette County. It has have marketed specialty crops to 10 local restaurants.
Beneficiaries:	Fay-Penn helped with driving consumer traffic by using the Fayette County "Buy Local Program." This was done by offering the first 25 customers at each of the farmers markets a $5.00 voucher that could be used towards their purchases at the farmers market that day, just by presenting us with their Buy Local Cards. The farmers simply turned the vouchers in to us at the end of the day for cash. The funding for the Buy Local voucher program was provided by Fay-Penn through there general fund. We averaged 75 consumers at each of the farmers markets with the Masontown market having the best turnout. This meant that farmers did have consumers that spent money at the markets. Our Masontown farmers even sold out of produce before 6 pm on July 9, 2010, with 175 consumers in attendance WMBS Radio provided 4 live remotes at the farmers markets for this year, radio ads during the Pirates baseball games, as well as additional ads on this radio station during the farmers market season. King Fish Production developed a new TV ad for this year's four (4) farmers markets. Fayette County Cultural Trust print ad for the four (4) farmer's markets went in their Connellsville Cross Road Magazine to promote the times, dates, and locations of all the farmer's markets. We partner with our local newspaper and developed a local newsletter, The Herald Standard; the newsletter was inserted into the paper on the third Sunday for the months of June, July, August, and September, 2010. Fay-Penn helped with driving consumer traffic by using the Fayette County "Buy Local Program." This was done by offering the first 25 customers at each of the farmers markets a $5.00 voucher that could be used towards their purchases at the farmers market that day. The farmers simply turned the vouchers in to us at the end of the day for cash. The funding for the Buy Local voucher program was provided by Fay-Penn through there general fund, which amounted to $125.00 for each market or $500.00 per week for the entire season. The farmers markets were held for 10 weeks which equals $5,000.00 that was invested in the Buy-Local Farmers Market Voucher Program that went directly to the consumers. We averaged 75 consumers at each of the farmers markets. With the discussion with the producers at the markets, we feel that the average consumer spent $7.50 per visit which means that the total sales per market day averaged $562.50. The average for the week for consumers sales were $2,250.00 and for the year $22,500.00 revenue for the local producers. This meant that farmers did have consumers that spent money at the markets. Our Masontown farmers even sold out of produce before 6 pm on July 9, 2010, with 175 consumers in attendance. We were able to reach out to 25,000 households, on the average 2 person per household potentially reading the Herald Standard, and the newsletter (The Be Local Buzz) which is inserted once a month. The insert only cost us $650.00 per month and $2,600.00 for the year. We believe that we could not reach out to the many households for less.
Lessons Learned:	We have learned that we need to be willing to continue to recruit more farmers to participate in our farmers markets, thereby giving us the optimal selection for our consumers of fruit and vegetables. We also know that we need to continue to work with Penn State Extension to help with identifying additional farmers for the

	markets. We know that we need to continue to drive consumer traffic by using the Fayette County "Buy Local Farmers Market Voucher Program." This will be offered next year to the first 20 customers at each of the farmers markets. We were thankful that throughout the farmer market season, we had to cancel only one market due to inclement weather and we know we need to find a good effected way to communicate with the farmers when bad weather is forecasted. A positive note is that we did a good job of getting information out to the consumer of dates, times, and locations of the farmers markets. We also got a good plan for driving the consumers to the markets with the Buy Local Vouchers. The negative is that we hoped to have more farmers at the markets but we did not. We found out that we lack the farmers and are helping to develop future farmers to bring fruits and vegetables to the markets. On a positive note, we did average three (3) farmers per market and this was our first year for four (4) farmers markets. We know that we are in the building stages of the farmers markets and will take two (2) to four (4) year to really get them establish. There was excitement from the communities' residents to continue the markets next year. In fact, there were consumers that did not want the markets to close. We are planning to add two new markets next year, because the residents see what we did in the areas this year bringing our county's farmers markets total to six (6) for next year. Our initial problem will be continuing to recruit more farmers to participate in our farmers markets, thereby giving us the optimal selection for our consumers. Even though there is not much differentiation between our four markets, we do consider them to have been a great success. As for the consumers we have done a good job getting the consumers to the farmer market but we need to continue the marketing program that we did last year along with the Buy Local voucher program.
Contact Person:	Robert C. Junk Jr., 1040 Eberly Way, Suite 200, Lemont Furnace, PA 15456 724-437-7913 bobj@faypenn.org
Project Title:	**PA Vegetable Website & Point of Purchase Supplies**
Project Summary:	The Pennsylvania Vegetable Marketing and Research Program has maintained a website, www.paveggies.org, as source of consumer information on Pennsylvania vegetables for several years. However, it was very basic and was created in-house. This project enabled the Program to have the website redone professionally as a source of current information on Pennsylvania vegetables with recipes, use tips, and connections to markets. The website also contains the reports of the various research projects sponsored by the Program and other information for the Program's growers. The Program also used funds from the grant to purchase and ship point-of-purchase materials to growers across the state. These point-of-purchase materials enable growers to identify their produce as being locally

	grown in Pennsylvania with colorful and professional-looking materials. The Program planned to develop an online directory of growers as part of the project. This part of the project was not completed as planned because the Program and the Pennsylvania Department of Agriculture partnered with Penn State University in adding Pennsylvania to the national MarketMaker program. This multi-state web-based directory of agriculture accomplished a similar purpose as the Program's intended online directory – allowing growers to list their farm products online. The Program did encourage its growers to list their farms and products on the MarketMaker site.
Project Approach:	In the summer of 2010, the Program had Graphtech, a local printing and design company, professionally reconstruct the Program's website at www.paveggies.org. The website contains the following pages: Find PA Veggies A listing of markets arranged by zip codes. Information about the Program's "August is PA Produce Month" promotion. A link to the Pennsylvania Department of Agriculture's "Consumers' Guide to PA Farm Markets." A list of the wholesale produce auctions in the state. A link to Penn State's Ag Map website. A link to Rodale Institute's "Farm Locator" website. News Text of the 14 press releases issued by the Program in 2011 and selected releases from previous years. Vegetable Information Nutritional information about vegetables. "Fun and Healthy Facts about Pennsylvania Vegetables" brochure. Recipes Over 100 vegetable recipes from the Program's annual Vegetable Recipe Contest. Grower Information General information about the Program. Annual assessment form for growers. The Program's latest newsletter. Research reports from the various research projects sponsored by the Program in conjunction with the Pennsylvania Vegetable Growers Association. Description of the point-of-purchase items offered by the Program. Order form for the point-of-purchase materials. During the first year of the redesigned website (July 2010 to July 2011), the following response was recorded: http://www.paveggies.org/ -- total requests: **82,672** Referring site report: number of requests: **43,894** (The Referring Site Report identifies sites on the Internet that have links to pages on this site.) Referring URL report: (The Referring URL Report identifies specific pages on the Internet that link to pages on this site.) Produce Markets: 9,229 Broccoli: 2,195 News Release (August 13, 2010): 1,719 Produce Auctions: 1,556 Recipe Main Page: 1,090 News Release (Enter the 2011 Recipe Contest): 881 Research Reports: 868

About PA Veggies: 825
News Release (Fresh Local Sweet Corn is Early This Year): 776
News: 723
News Relase (Get Your Pennsylvania Pumpkins Now): 688
Cabbage: 568
News Release (Winners Declared in 2010 Vegetable Recipe Contest): 477
Corn: 439
Find PA Vegetables: 438
News Release (Plenty of Pennsylvania Snap Beans This Year): 321
News Release (Plenty of Home Grown Tomatoes): 310
Asparagus: 277
Wholesale: 254
Vegetable Nutrition: 236
Leafy Greens: 218
Cucumbers: 202
Broccoli: 188
Grower Info: 169
Lima: 156
Peas: 150
Press Release ("Simply Delicious" Melons are Here): 140
Turnips: 134
Press Release (Beets, Carrots and Turnips Are Full of Flavor and Nutrition): 120
Eggplant: 120
Cabbage: 118
Asparagus: 116
News Release (Winners Declared in 2010 Vegetable Recipe Contest): 107
News Release (PA Peppers Add Spice, Color and Nutrition to Your Meals): 91
Melons: 87
Eggplant: 67
Pumpkin: 64
Press Release ("Simply Delicious" Recipes for Cucumbers): 63
Press Release ("Simply Delicious" Lima Bean Recipe): 62
Press Release (“Simply Delicious" Recipes for Spinach): 54
2009 Research Report (Foolad): 52
Press Release (Fall is the Prime Season for Pennsylvania Broccoli, Cabbage and Cauliflower): 51
Melons: 50
Press Release (Reduce Your Food Carbon Footprint): 38
Press Release (Fresh Zucchini Recipes for 2008): 37
Grower Info: 32
Cucumbers: 32
Corn: 30
Research Report 2009 Bogash Tomatoes: 28

On July 15, 2011, the reporting system was changed. From July 15 to July 31, 2011, 225 different persons visited the site 955 times for a total of 668 pageviews. From August 1 to 31, 2011, when the site was actively promoted by the Program with a radio advertising campaign, the number of visitors increased to 776 unique visitors with 995 visits and 2,986 pageviews. For the month of September, 2011, the number of visitors fell to 361 with 387 visits and 786 pageviews. For the month of October, 2011, there were 314 visitors who visited

326 times for 511 pageviews.

An on-line rebate offer was offered to visitors to the website during the first two week of August to collect consumer information and gauge website use. They were offered a $2 rebate if they returned a survey and showed evidence of purchasing $20 worth of Pennsylvania vegetables between August 5 and 15. Only 29 persons returned the surveys, most apparently distributed by one farm market rather than by persons who visited the website. Sixteen had not purchased the required $20 worth of vegetables – they included fruit or other items in the $20 total even though the forms stated plainly (although obviously not plainly enough) that the rebate offer was for purchasing $20 worth of Pennsylvania vegetables. These 16 were sent a letter explaining the requirement and offered an extended time period to meet the $20 requirement. Only four did so. Thus this rebate offer and survey attempt were not successful. Perhaps the value of the rebate should have been a greater amount to entice more visitors to the website to participate. The counts showed a good number of persons visited the website, but only a handful took advantage of the offer.

The Program offers various point-of-purchase items to its growers to help them identify their products as locally grown with professional looking signage and other items. As part of this grant project, the Program purchased supplies of the following items in 2010:

- Clip-on Price Cards – for use in pricing items at markets (3,000 plastic badges distributed in packs of 10 badges)
- Price Cards – styrene price cards with the "Pennsylvania Produce Simply Delicious" logo imprinted on them. (20,000 cards distributed in packs of 10 cards)
- Recipe Cards – with finalist recipes from the 2009 Vegetable Recipe Contest (5,000 copies of 8 recipes distributed in packs of 50 cards of each recipe)
- Shirts – with the "Pennsylvania Produce Simply Delicious" logo imprinted on the front for market sales personnel (375 shirts)
- Aprons – with the "Pennsylvania Produce Simply Delicious" logo imprinted on the front for market sales personnel (150 aprons)
- Crop Stickers – for use with the Program's "Pennsylvania Produce Simply Delicious" roadside signs. (11 different imprints, 3,500 stickers total)
- Sign Stakes – for use with the Program's "Pennsylvania Produce Simply Delicious" roadside signs. (50 stakes)

Grants funds were also used to purchase shipping supplies (boxes, tape, etc.) and pay postage to ship point-of-purchase orders to 406 growers in 2010.

In 2011, the following point-of-purchase items were purchased:

- Clip-on Price Cards – for use in pricing items at markets (4,000 plastic badges distributed in packs of 10 badges)
- Recipe Cards – with finalist recipes from the 2010 and 2011 Vegetable Recipe Contests (7,000 copies of 16 recipes distributed in packs of 50 cards of each recipe)
- Recipe Cards Racks – display racks which hold 16 recipes (25 racks)
- Hats – with the "Pennsylvania Produce Simply Delicious" logo imprinted on the front for market sales personnel (70 hats)
- Sign Stakes – for use with the Program's "Pennsylvania Produce Simply Delicious" roadside signs. (275 stakes)
- Roadside Signs – corrugated plastic signs (18" x 24") with the "Pennsylvania Produce Simply Delicious" logo printed on with room for a sticker with the crop name (700 signs with stakes)
- Price Stickers – oval stickers with "PA Produce Simply Delicious" with space to allow for the price (400 rolls of 500 labels).
- "Fun and Healthy Facts about Pennsylvania Vegetables" Brochures – brochures designed specifically for

	students that show the different plant parts that are eaten in different vegetable crops (3,500 distributed in packs of 100). Grants funds were also used to purchase shipping supplies (boxes, tape, etc.) and pay postage to ship point-of-purchase orders to 368 growers in 2011. The point-of-purchase items are priced to cover the cost of the item and an allowance for the shipping. Growers are given a credit equal to half of their annual assessment payment to the Program with which they can order point-of purchase items at no cost. If they choose to order more items than their credit, they must pay the balance above their credit amount. Many growers only order the amount of items they can obtain with their credit although some order considerable additional quantities. As stated above, the project proposal included development of an online directory of wholesale vegetable growers in Pennsylvania to replace a directory formerly maintained by the Pennsylvania Department of Agriculture that had become outdated. This part of the project was not completed as planned because the Program and the Pennsylvania Department of Agriculture partnered with Penn State University in adding Pennsylvania to the national MarketMaker website developed by the University of Illinois. To date, 82 vegetable farms are listed on the PA MarketMaker website.
Goals and Outcomes Achieved:	One of the goals of the project was to increase the effectiveness of the Program's website at www.paveggies.org as measured by the number of website hits, looking to increase the average of 5,000 page hits a year by a minimum of 50% to 100%. While the methods used to count page hits changed as the software used to measure the pagehits was changed, it would seem that in the first year this goal was easily achieved with over 82,000 requests received. The software used the second year recorded 4,400 pageviews from July 15 to September 30, 2011. The recording data seems to indicate that during both the first year and the second year, the most visited page was the produce markets page. The Program actively promoted the website through another project and the website was also promoted by the Pennsylvania Vegetable Growers Association, so some increases in usage were potentially due to these efforts and not simply the enhancement of the website. As stated earlier, the Program's effort to measure consumer interest in the website through a $2.00 rebate offer on the website homepage was failure. Apparently only a handful of consumers printed the offer off the website, purchased $20 of Pennsylvania vegetables and applied for the rebate. A total 29 persons applied for the rebate but most had apparently obtained the offer from a local farm market that printed out the offers for their customers. The sample size was too small to draw valid conclusions from and since it is assumed that many of them did not even visit the website, this method of measuring website use was not effective. The effectiveness of the point-of-purchase materials distribution to growers is best measured by the continued use of these materials by the growers from year to year. The average number of orders received between 2005 and 2009 was 392 per year. In 2010 the Program received 406 orders, a very slight increase, while in 2011, the number of orders decreased to 368, a 6% drop over the five-year average. While we would like to see the number of orders increase a little each year, the seven-year average is just under 391 so the number of orders has stayed pretty constant over the last seven years. Each fall growers are surveyed to ask their input on changes or improvements to these materials. While there some negative comments each year, the overall tone of the grower survey with regards to the point-of-purchase materials has been positive. For example, in 2010 we had two complaints about the printing coming off of the shirts and aprons when they were washed, several suggestions for a dry erase finish on the price cards and paddles, sturdier stakes for roadside signs, etc. The Program attempts to keep these issues in mind when ordering new supplies of the point-of-purchase materials.

The Program carries on several other marketing/promotion activities besides those covered in this project. They are all ultimately designed to help increase the fresh market sales of the growers in the state. We do not feel it is feasible for us to attempt to measure actual sales data because of the reluctance of growers to submit exact dollar sales and the impossibility of getting data from all the growers. We have, however, in the fall of 2010 and 2011, asked our growers to give us their best estimate as to whether their fresh market sales of vegetables, relative to the previous year, have: decreased, remained about the same, increased 1 to 5% or increased 5% or more. We have also asked them to indicate if they made major changes to their operations in the past year that would have significantly increased their sales (changes like construction of new market facilities, attending a new or additional farmers' market, starting a CSA, etc.). In 2011, many parts of the state experienced flooding or at least excessive rainfall that caused major losses for growers. Therefore, we asked them to also estimate whether their sales would have increased or decreased if the weather during September 2011 had been "normal". The results of these survey questions from just over 200 responses each year are presented below:

Compared to the previous year, has your sales volume

	2011	2010
- decreased	39%	21%
- remained about the same	30%	37%
- increased 1 to 5%	20%	23%
- increased 5% or more	11%	14%

Did you make major improvements or changes to your operation that you believe significantly increased your sales (built new market facilities, attended an additional farmers market, started a CSA, etc.)

	2011	2010
- yes	12%	12%

Did the flooding and wet weather in September significantly decrease your sales/yields?

- yes 68%

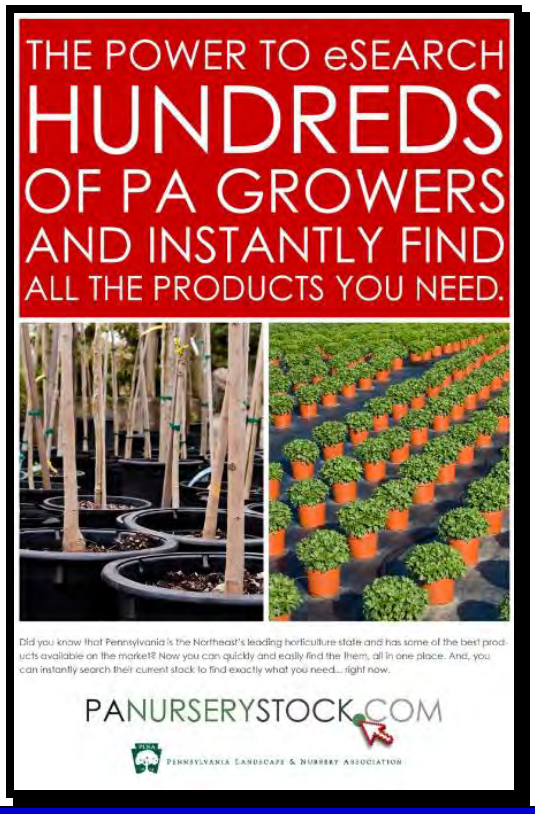
If September 2011 had been a "normal" September, do you project your sales volume for 2011 (compared to 2010) would have:

		2010
- decreased	10%	21%
- remained about the same	39%	37%
- increased 1 to 5%	32%	23%
- increased 5% or more	19%	14%

This type of survey cannot give solid data. Moreover, besides the Program's promotion efforts involved in this project and the Program's other promotion efforts, there are numerous other factors that influence a grower's sales. Most important, of course, is the grower's own individual efforts and skills in promotion, merchandising, management, and production. The national "buy local" consumer trend also plays a major role in the success of local growers' sales. Still, the survey data does show that more growers are estimating increased sales over the past two years had the weather been "normal". So while the Program cannot claim sole credit for this apparent growth in sales of local produce, hopefully the Program's promotion efforts, including those funded by this grant project, and have helped contribute to that apparent growth.

Beneficiaries:	Pennsylvania Vegetable Growers
Lessons Learned:	The website must be continually updated to build and maintain traffic. While the expectation was that vegetable recipes would be focus of website viewers, it appears that information on markets for Pennsylvania

	vegetables is the primary interest. Thus, this part of the website must be improved to provide more comprehensive information on the markets offering Pennsylvania vegetables. While the increase in traffic was significant, there is considerable room to develop more traffic. Obviously the $2 rebate offer was a failure. While there was considerable traffic on the website, only a handful responded to this offer. The Program will need to evaluate whether a higher rebate value (perhaps $5) would entice more website viewers to participate in the survey and respond. Given the fact that this year's rebate program was skewed by an individual market distributing the forms to customers who did not necessarily visit the website, the use of the rebate program as a means of judging website use is questionable. The annual grower survey on suggestions for point-of-purchase materials always yields numerous suggestions. Many times the suggestions are conflicting – what one grower likes another grower dislikes. Sometimes the suggestions are impractical or it is simply unfeasible for the Program to implement all the suggestions. We do, however, look for suggestions that can be implemented and for similar suggestions or complaints that submitted by several growers. Several of our current point-of-purchase items were developed from growers suggestions: the roadside signs, price stickers and clip-on price cards.
Contact Person:	William Troxell, Executive Director, phone 717-694-3596, fax 717-694-3596, pvmrp@embarqmail.com
Additional Information:	Website Address: www.paveggies.org
Project Title:	**PLNA Online Directory**
Project Summary:	Nursery stock and floriculture are the 3rd largest agricultural commodity in Pennsylvania. PLNA represents this industry within Pennsylvania, the Mid-Atlantic Region and nationally. And those in the industry who are searching for nursery stock in Pennsylvania look to the PLNA for that resource, however, at this time nothing is in place. In many other states the landscape and nursery association is the provider of this information; they have stock guides that are distributed at trade shows, nationally and regionally, and also have online search guides on their websites to help market their members to the industry. Prior to this grant PLNA gathered detailed information from its members regarding the type of stock that they grow or rewholesale along with a description of their business. This grant allowed for enhancements to the PLNA database and website in order to provide an interactive, up-to-date search feature of nursery stock and floriculture growers and rewholesalers in Pennsylvania.
Project Approach:	In February 2010 PLNA invested in new technology to enhance its current website to incorporate the directory search function of its Pennsylvania members who grow and sell Nursery Stock. The website is www.PANurseryStock.com. Upon implementation a letter was sent to over 150 PLNA members who have identified themselves as wholesale growers, brokers and/or rewholesalers of nursery stock to collect/confirm the data PLNA had on file regarding the plants they grow, their demographic information and a brief company description. Responses were updated in the online directory and PLNA staff continues to update these listings as we receive updated information and the website also allows members to login and update their own listings as needed.
Goals and Outcomes Achieved:	In order to help promote the new website ads were placed in American Nurseryman, Pennsylvania Landscape & Nursery magazine, 2011 PLNA Membership Directory, PLNA e-News, www.PLNA.com and www.PANTSHOW.com.

	These ads reached over 50,000 potential users and resulted in over 3000 click-thrus during the grant period. Click-thrus continue at the rate of approximately 200 per month. PLNA continues to work with the software provider to enhance the user experience in searching and finding wholesale growers, brokers and rewholesalers of nursery stock.
Beneficiaries:	PANurseryStock.com is a website that can be utilized by every green industry company with access to the internet. The goal was to provide a place that buyers could find suppliers in Pennsylvania. The website is not limited to a defined group therefore, the number of beneficiaries of the website is undeterminable.
Lessons Learned:	While the listings are self-managed, we learned that many companies in our industry are not as technology savvy on the administrative side and required a hands-on walk-through in updating their listings. However, they are appreciative of being included in a general directory that is marketed by a recognized association on the web. We have also learned of the expense involved in marketing on a national level; which we found to be very expensive. Therefore, we have limited our advertising to GoogleAdWords and more regional print ads; such as the PLNA publication. We are in the process of changing platforms for the website which includes a much more robust SEO (Search Engine Optimization) and expect that this will enhance the amount of traffic to the website.
Contact Person:	Gregg E. Robertson, President, 1707 South Cameron Street, Harrisburg, PA 17104 717.238.1673, grobertson@PLNA.com
Additional Information:	
Project Title:	**PA Preferred State Branding Program**
Project	The state marketing and branding program is designed to enhance the competitiveness of specialty crops in

Summary:	Pennsylvania. The program touts the benefits of buying local, supporting state economy and choosing a higher quality. With this project we continue to enhance the brand focusing on specialty crops. The PA Preferred™ project has four specific activities a retail promotion initiative, school foodservice pilot program, culinary events, and development of a specialty crop website. These activities have strengthened the state brand recognition; improve the communication between farm and fork. The PA Preferred state branding program is the main focus of the Bureau of Market Development within the Department of Agriculture. It is the logo associated with agriculture in the state. The Department of Agriculture continues to invest in this branding program to differentiate its agricultural products from competitors as well as providing a vehicle in which consumers can be better informed to the origin of their food. This project focused on solely enhancing the specialty crops affected by PA Preferred program. Prior to this grant program the brand did not focus on specialty crops. It was more generic. The Department agriculture realized the growing that specialty crops production was a growing trend and needed additional support through the activities in this project. A website that provide specialty crop focus, promotional events featuring specialty crop producers and their products, and a culinary event to expand the awareness of specialty crops. A school pilot was planned to bring specialty crops to the school service audience.
Project Approach:	The state branding program represents Pennsylvania agriculture industry, through a recognizable logo (blue PA Preferred & gold checkmark). The goal of this project was to expand the recognition of the brand and build membership, consumer purchases and increase support for Pennsylvania agri-businesses. This logo is a seal of fresh, quality and reassurance that you are supporting your state's producers and local economy. To accomplish this we devised four activities with combined outcome to increase awareness of the brand, stimulate consumption and educate consumers on the benefits of Pennsylvania specialty crops. First, a new PA Preferred website to better convey key information. The development of the new PA Preferred website has been designed with the assistance of Saint Joseph University School of Food Marketing (SJU) and Tandem Associates. They conducted market research of the site at the 2011 PA Farm Show. An intercept survey was developed and used to solicit consumer feedback about new site. The research found: website had 16,742 visits in the past 10 months (1,674/month) with an average view time of 2.23 minutes. This is compared to 16,416 last year during the same period (2% increases~ lower than our goal of 10%). The average visitors are viewing 3.42 pages per visit compared to 3.1 pages last year. The most popular section of the site is 'company search' (15%); followed by the 'culinary connection' (10.02%). These remain the same as last year. Website link: www.papreferred.com. The PA Preferred website was developed to capitalize on the growing importance of electronic search, information gathering and educating end user. The new website provides a greatly enhanced searchability feature for locating PA agricultural products, information on specialty crops and upcoming events that promote the consumption of specialty crops. The website did see an increase in traffic to the website which is believed that promotion of site is driving consumer to search for PA Preferred products thus reaching an outcome of increased awareness and understanding about PA agriculture. It also, has provided key hints to where we need to focus our efforts: ie. the search for PA specialty crops/fresh fruit and vegetable providers. Also, the culinary connection where recipes are featured along with nutritional tips this enhances and is expected to increase sales of PA products / specialty crops. In addition to creating an improved website, we conducted several retail promotions increase sales of specialty crop products and visibility of PA brand. PA Preferred conducted a buyer vendor show with Giant Foods Chain in May, 2011 at the Giant Center in Hershey, PA. Nearly 800 plus vendors participated in the daylong event. There were 50 PA Preferred companies who were able to have 1 on 1 meetings with respective category managers. This has led to the six new projects being granted shelf space in Giant distribution chain. It has increased in-store use of the PA Preferred brand and including the brand on Pennsylvania Potatoes.

A retail buyer / producer event was coordinated with PA Apple Marketing Board at the Mid-Atlantic Fruit and Vegetable Growers Conference in February, 2011. The panel was made up of 5 buyers (wholesalers, produce auction, brokers, packing house representatives) they discussed the attributes important to being able to market specialty crops, impact of good agricultural practices, pricing and distribution challenges. The session was attended by 25 conference participants who are either currently growing specialty crops or looking to expand their offering of specialty crops.

Another activity was the incorporating school foodservice sector. This activity is going to be changed to work with a school foodservice provider, to assist with linking foodservice decision makers with PA Preferred specialty crop producers. There has not been measurable activity in this project due to a change in the personnel at the food broker/ distributor side. A new PDA staff person has joined the Bureau and will be reaching out to potential new partners in an attempt to complete activity. If this is not deemed possible in the next few months, the plan is to request a project extension.

In achieving our project goal we also have maximized the opportunity to showcase specialty crops and culinary arts at the 2011 PA Farm Show. The culinary event was conducted at the 2011 farm show. Culinary schools, celebrity chefs and culinary students cooperated to deliver an educational experience to more than 500,000 people. The PA Preferred culinary connection hosted eight days of live cooking demonstrations from 11a.m to 6 p.m. Chefs and students utilized a specialty crop in every dish featured on stage in every dish prepared (ie. vegetable day, apple, wine, mushroom etc). The event was aired on the Pennsylvania Cable Network (PCN) along with other local media outlets. In-addition, food editors from across the state wrote articles in support of the event. To provide long term support for using specialty crops in menu items we provide in collaboration with Capital Blue Cross - Better Health Works to print 14,000 recipe books that include nutritional and seasonal sourcing information.

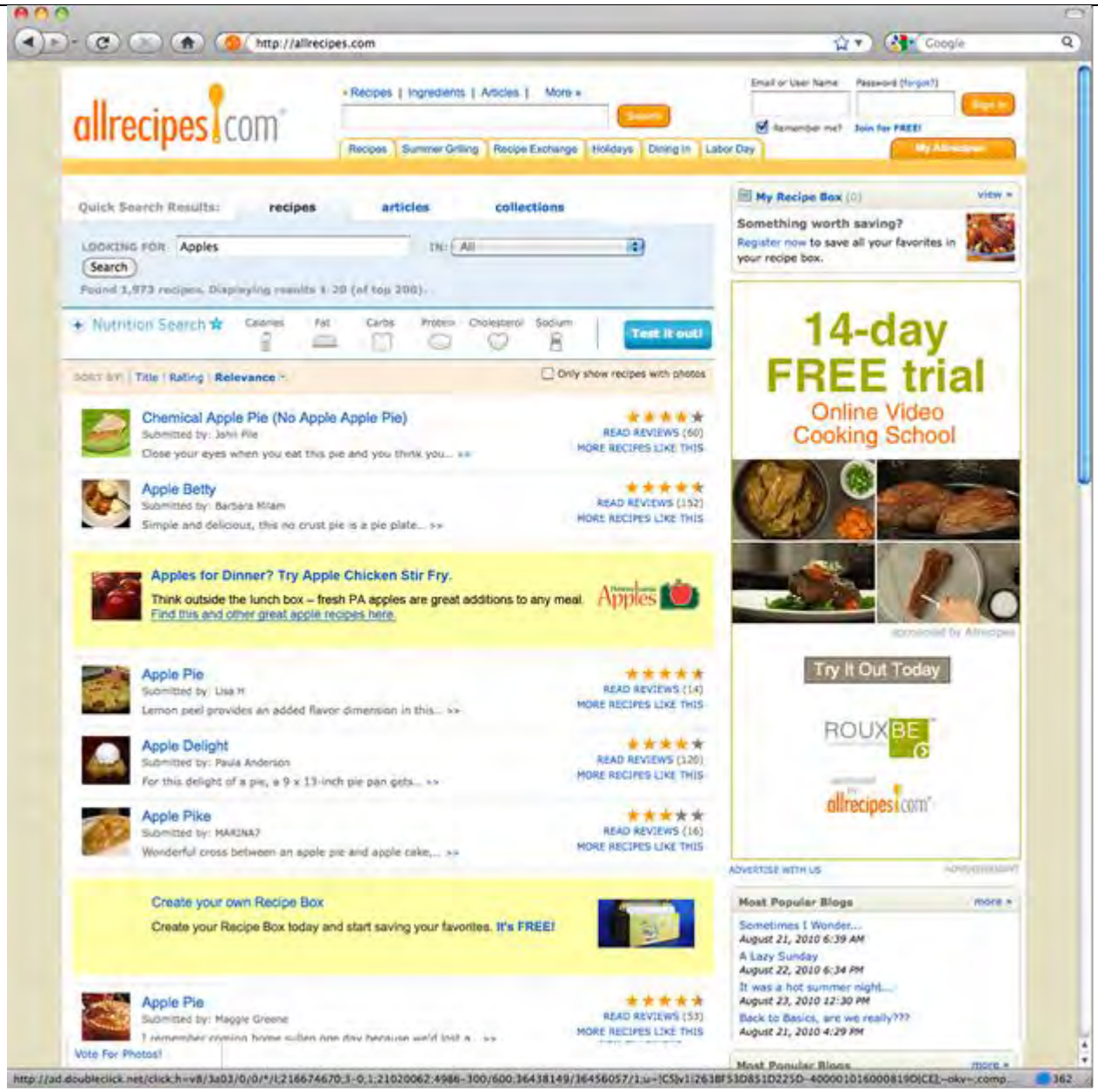
Goals and Outcomes Achieved:	The website design version one has been completed and the website is live. Evaluate survey results and make necessary enhancements. Resolve the school pilot activity to determine if a cooperative effort in summer of 2012 is viable with full time complement position being filled. The eight day-long event resulted in nearly 2,000 attendees to experience live demonstrations on benefits of incorporating specialty crops into their menu planning as well as the nutritional benefits associated. The @45 minute demonstration was also broadcast on PA Television live show coverage for three days; reaching nearly 50,000 viewers. The outcome is to increase

	awareness of PA specialty crops as well as educate the public about new methods for incorporating nutrient rich foods into their diet. In-addition, the PA Preferred Marketplace vendors were surveyed to determine if the PA Preferred brand was helpful in marketing their product, had sales increased or decreased over prior year and what promotional products were most helpful. Nearly 40 out of the 60 find the brand beneficial in promoting their product. Fifty out of the 60 said sales have increased and the majority preferred the PA Preferred stickers, price signs and clip art for promotional point of sale.
Beneficiaries:	The primary beneficiary is specialty crop producers. The activities are designed to increase awareness, consumer knowledge about the availability of specialty crops and nutritional benefits. The utilization of PA Preferred (state brand) is enhancing the image of Pennsylvania specialty crops and assisting products in differentiating themselves in a competitive market place. The Bureau of Market Development continues to focus on growing PA Preferred membership from 1,500 to 2,000 members through these various activities.
Lessons Learned:	The activities have been conducted as planned with the exception of a school pilot program due to three vacant full time positions in the Bureau and staffing changes at both the food distributor and state agency. The department has received approval to backfill one position by April. Currently, conversations are occurring with the Department of Education to determine if PA Preferred can partner to conduct a school pilot program over the summer at a summer school for elementary students in Harrisburg.
Contact Person:	Lela Reichart, Division Chief, PA Department of Agriculture, 2301 North Cameron Street, Harrisburg, PA 17110. 717-783-1394. lreichart@gov.pa
Additional Information:	The Website survey and survey results have been sent as attachments on a separate document.

Project Title:	**PA Farm Market Campaign for PA Apples**
Project Summary:	This project included the design and execution of a Fall 2010 media campaign utilizing radio and online advertising to increase consumer awareness of Pennsylvania Farm Markets and to promote Pennsylvania Apples and apple products along with other *Pennsylvania Preferred* specialty crops. The Pennsylvania Apple Marketing Program (PAMP) works to promote Pennsylvania apples and apple products throughout the year. We often have the opportunity to work in cooperation with retailers (supermarkets, wholesalers, etc) to advertise and promote Pennsylvania apples to the public both in-store and in weekly ad circulars. However, reaching the public with advertising and messaging about farm markets has not been financially viable for our organization until receiving grant assistance from the Specialty Crop Block Grant Program. Growers are always looking for ways to increase profitability on the farm. Direct sales at a farm market are one of the best ways to maximize profits. Growers can market their products at a fair value directly to consumers and eliminate any additional costs such as packing, storage, transportation, and/or brokerage fees. Traditionally, our program has supplied farm markets with point of sale items to help market Pennsylvania apples, but each market is responsible for their own advertising and outreach to the public. This grant program provided an opportunity for PAMP to assist a group of apple marketers that has been underserved by our organization. Pennsylvania has over a thousand farm markets spread across all 67 counties. This media campaign spotlights markets that feature Pennsylvania apples, highlights the benefits of eating fresh apples, and encourages consumers to discover their nearest farms, ultimately driving additional business to members' farm markets. At a time when consumers are looking to "go green" and "buy local", Pennsylvania farm markets are a perfect place to shop. Consumers can get the freshest selection of fruits, vegetables and a variety of specialty

	products, most of which are grown right on the premises. Because most products are not packaged or transported, there is a lot less energy expended from farm to plate, making farm markets an environmentally friendly retail outlet. In addition, buying direct at farm markets offers consumers a perfect opportunity to support their local economy and their local farms. Shopping for fresh fruits and vegetables at farm markets will also help support and maintain a healthy lifestyle. The USDA recommends up to nine servings of fruits and vegetables in our daily diets. Most farm markets offer a wide array of specialty produce that will allow families plenty of choices to meet their dietary requirements.
Project Approach:	This project included the design and execution of a Fall 2010 media campaign utilizing radio, outdoor, and online advertising to increase consumer awareness of Pennsylvania Farm Markets and to promote Pennsylvania apples and apple products along with other Pennsylvania Preferred specialty crops. While Farm Direct markets offer many products, the majority of our members feature fresh fruits and vegetables at their markets. The Pennsylvania Apple Marketing Program (PAMP) staff worked closely with PPO&S (ad agency) in determining the most cost effective way to reach as much of the Commonwealth as possible with our messaging. We focused first on location of Pennsylvania's Farm Markets operated by PAMP Program members, making sure those areas received adequate radio and outdoor coverage. From there, we added major metro areas, and included as many smaller media markets as we could afford. Next we developed the concept "Find Fresh". We wanted to capitalize on the "Buy Local" trend, and encourage consumers to find the freshest produce possible; from their local growers. Billboards were designed prominently featuring fresh apples and the Pennsylvaniaapples.org URL, and radio copy was developed which centered around fresh apples but also included mention of other tree fruits and vegetables. Examples of both are below: **Pennsylvania Apple Marketing Program** *"Find Fresh"* *:60 Radio Draft (R-06/03/10)* *MAN (Wise, friendly, down-to-earth voice of a grower):* *When out-of-state fruits and vegetables travel to Pennsylvania, they lose a little something along the way. It's called "fresh." And as everyone knows, once food has lost its "fresh," there's no getting it back.*

	But why settle for produce from another time zone when "fresh" is plentiful at Pennsylvania Farm Markets, right here in your own backyard? Each market is its own showcase of our state's finest bounty, locally grown and freshly picked. *Like delicious varieties of orchard-fresh Pennsylvania apples. Crisp. Tasty. Nutritious. (sound of man biting into an apple) Yep, one bite proves it - there's* *nothing quite like fresh.* *And now, there's a simple way to find "fresh" for you and your family. Go to Pennsylvania-Apples-dot-org and find farm markets close to you. Or plan a little road trip and discover others nearby.* *One thing for certain: If your journey begins at Pennsylvania-Apples-dot-org, you're sure to find "fresh."* In addition to this project, work continued on our new www.pennsylvaniaapples.org website. The new PAMP website was launched in August. The website includes a searchable database of PAMP grower member Farm Markets. Our PAMP grower members, as orchardists, primarily feature apples and other tree fruits such as peaches, pears, and plums at their markets. Many also include some home-grown or locally sourced vegetables and plants. Our members' markets are heavily weighted towards specialty crops. While a link to the Pennsylvania Department of Agriculture's website for a listing of all Pennsylvania Farm Markets was also provided, many of those are weighted heavily towards vegetable production. During the campaign, the PAMP website showcased the *PA Preferred* logo. All of the media in the campaign was designed to drive consumers to the website to help them find local farm markets featuring apples and specialty crops. We also added an online advertising component, through www.allrecipes.com. This website was chosen because it is the number one women's lifestyle website as well as the number one food website. This was perfect for reaching for our target demographic, women ages 25-54. It also boasts about 9.9 million unique visitors per month. We ran a large banner ad on the page as well as text links and search links. An example of a search link is provided below:



The ad campaign ran from September 13 – October 24, 2010. Initial data indicates that it was a huge success! Here are the highlights:

Radio

- 479 radio spots aired in 61 counties throughout the state from September 20 – October 17, 2010.
- The radio campaign covered 91% of the state.

Online

- 1.6 million impressions from September 13 – October 24, 2010.
- 1,948 clicks
- 0.12% click-through average – exceeding the national average

Outdoor

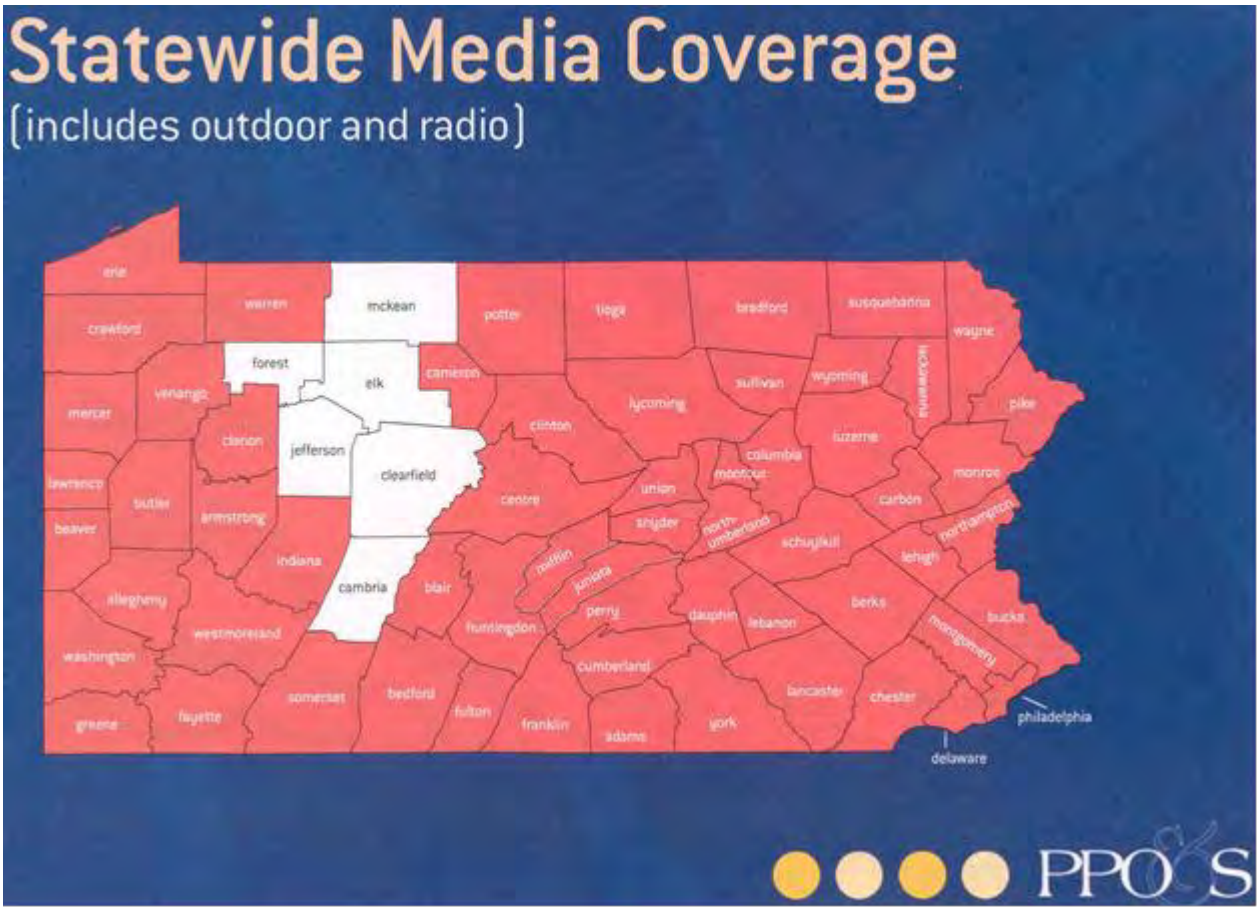
- 30 billboards posted in 8 counties (Central PA) from September 20 – October 24, 2010

- Garnered a #25 showing (25% of the population saw the boards)

Added Value

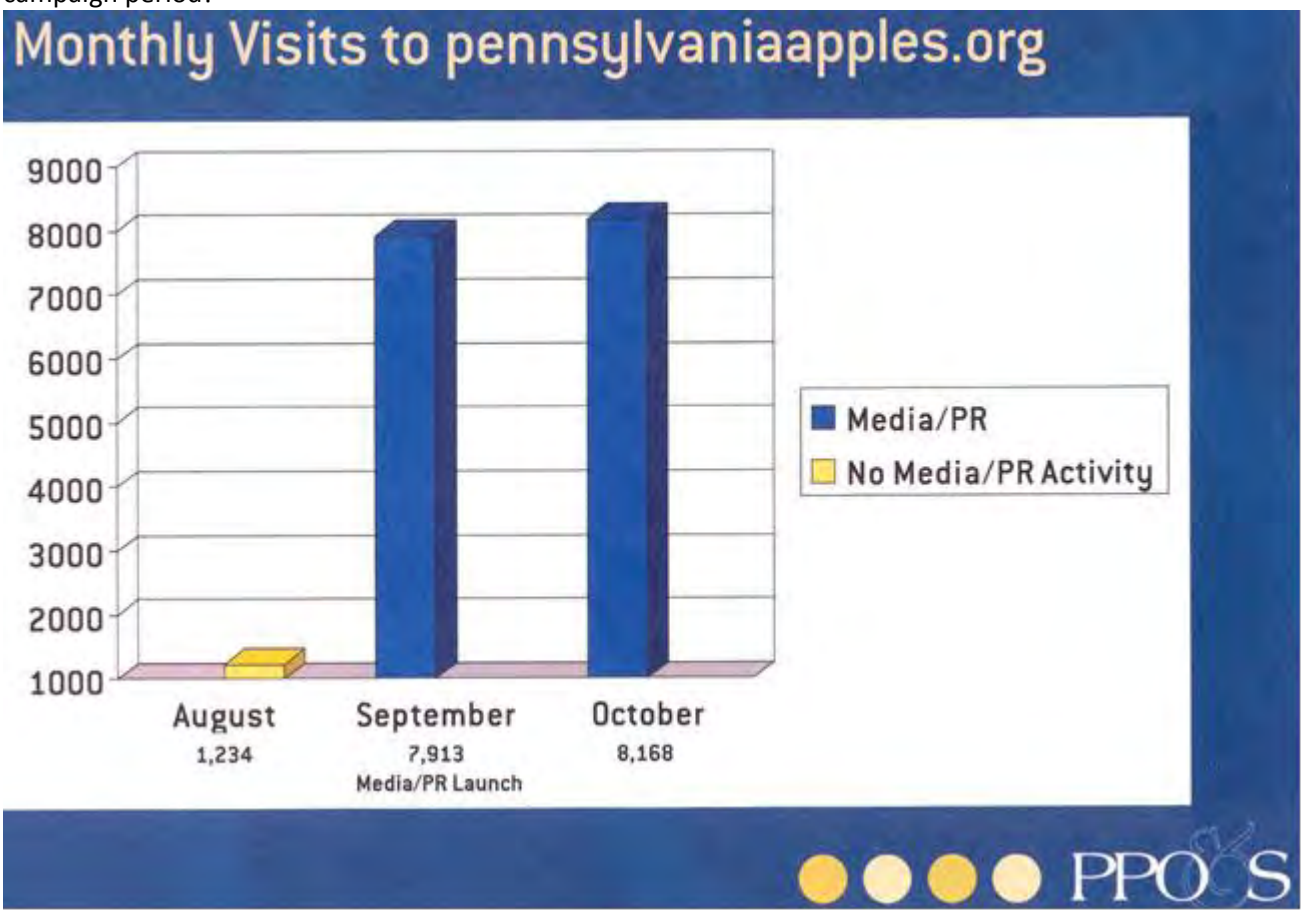
- PPO&S negotiated an estimated $21,000 in added-value opportunities. There are items that we received as a result of the media buys, at no additional cost. They included:
  - 20 :05-:10 second sponsorship messages on radio
  - 7 :15 second radio spots
  - 5 banner ads on radio station homepages
  - 5 interviews on various radio stations (done by Karin Rodriguez)
  - 8 additional billboards, which garnered at #20 showing over four weeks in four counties.

<u>All media - radio, online, and outdoor ads included a reference to the Pennsylvania Apple Marketing Board website.</u> Media coverage statewide for outdoor and radio covered 61 out of 67 counties in Pennsylvania. Coverage map is below:



All media - radio, online, and outdoor ads included a reference to the Pennsylvania Apple Marketing Board website. We used web traffic as an indicator that our message was reaching consumers. We had intended to use the previous three months as a baseline, however, the analytics package was purchased in July 2010, so we only have two months worth of data as a baseline. We had hoped to achieve a 200% increase in the number of website hits during the campaign compared to the average of the prior months. Here are some preliminary results.

Goals and Outcomes Achieved:	Available statistics indicated that we exceeded our goal with nearly a 650% increase in website hits during the campaign period!



The top three referring sites (indicating how people reached our site) were:

1. Direct Entry – consumers typed in the www.pennsylvaniaapples.org URL
2. www.b101.com – consumers followed a link from a Philadelphia radio station
3. www.allrecipes.com – consumers followed a link from our ads on the site

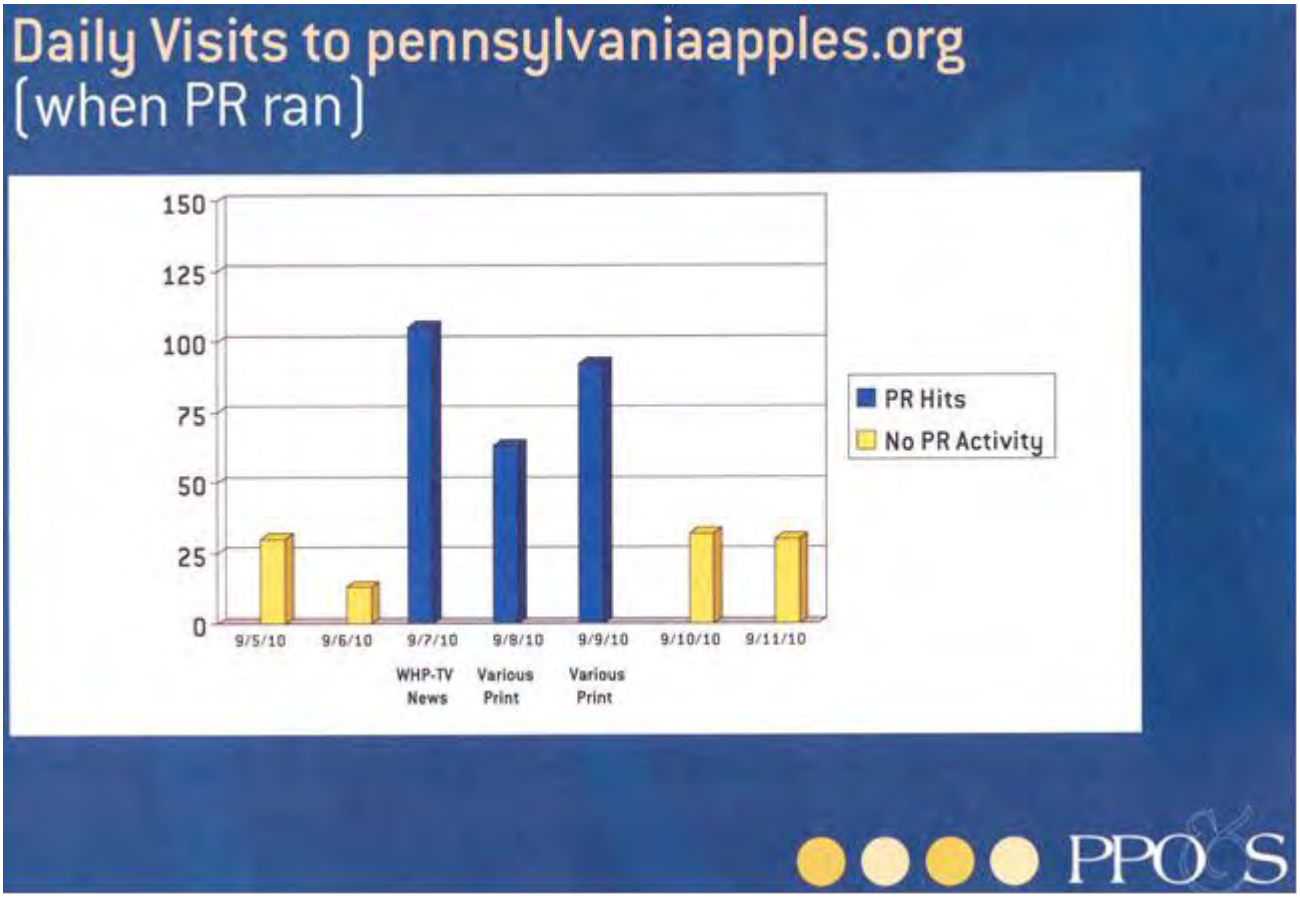
The top three pages on our website were:

1. Home page
2. Where to Buy – searchable list of Farm Markets
3. PA Apple Varieties

It should be noted that the Pennsylvania Apple Marketing Program also used our new Public Relations campaign, also being run by PPO&S, to augment the "Find Fresh" campaign. We did press releases on the campaign to statewide media outlets as well as industry publications and we were successful in getting pickup from many daily and weekly newspapers. In addition, we did a live morning news broadcast on location at a Lancaster County Farm Market just prior to the launch of the campaign. In all instances, we were sure to promote the www.pennsylvaniaapples.org website.

The results of the PR campaign can be seen clearly in web hits from the days PR events were happening. See

below:



The Pennsylvania Apple Marketing Program was awarded $62,500.00 to design and execute this program. All invoices are attached to this report. Below is a detailed listing of invoices paid, totaling $99,141.00. This total includes a 100% expenditure of available USDA Specialty Crop Block Grant funding. The Pennsylvania Apple Marketing Program contributed an additional $36,641.00 in funding to this project to allow greater market coverage and to add an online presence to the campaign.

The Pennsylvania Apple Marketing Program (PAMP) also contributed in-kind support in the form of salary, benefits, and travel for PAMP staff as well as a website contractor. Improvements were made to the PAMP website in anticipation of this ad campaign, adjustments and updates were made throughout, and PAMP purchased a statistics package for the website that allowed us access to detailed information about the number of visitors, length of visits, top pages viewed, and more. These statistics allowed us to better measure the impact and outcome of the campaign. In-kind support totaled approximately $ 26,167.55

The first "Find Fresh" consumer marketing campaign was a huge success for Pennsylvania's Apple Industry, benefitting a majority of Pennsylvania's 272 apple growers and especially those orchardists who operate a farm direct market. We truly appreciate the opportunity provided to us through USDA to execute a campaign that until now has been cost-prohibitive.

Pennsylvania growers and orchardists operating farm direct markets indicated that they had an incredible fall season, and that sales were up. The quantitative data we have available, our website statistics, indicate that our message was reaching consumers and that they were indeed searching for local markets on the

	www.pennsylvaniaapples.org website. Web traffic to the site increased 650% during the campaign time frame compared to the prior three month period. The Pennsylvania Apple Marketing Board members, as well as our grower members are pleased with the success of the campaign, and we look forward to expanding the project in future years.
Beneficiaries:	In conclusion, this "Find Fresh" consumer marketing campaign has been a huge success for Pennsylvania's Apple Industry, and we truly appreciate the opportunity provided to us through USDA to execute a campaign that until now has been cost-prohibitive. While it is difficult to prove with hard facts that the campaign improved business at Pennsylvania Farm Markets, we have heard from many of our farm marketers that they had an incredible fall season, and that sales were up. The data we do have, our website statistics, indicate that our message was reaching consumers and that they were indeed searching for local markets on the www.pennsylvaniaapples.org website. The Pennsylvania Apple Marketing Board members, as well as our grower members are pleased with the success of the campaign, and we all look forward to improving on the success in the next year.
Contact Person:	Karin Rodriguez, Executive Director, Pennsylvania Apple Marketing Program, 2301 N. Cameron Street, Room 303, Harrisburg, PA 17110 www.pennsylvaniaaapples.org