



WEST VIRGINIA DEPARTMENT OF
AGRICULTURE

SPECIALTY CROP BLOCK GRANT
PROGRAM

FINAL REPORT 2015

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Submitted by:

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PROJECT TITLE

Randolph County Edible Park

Amount Awarded: \$8,982.00

PROJECT SUMMARY

This project was a collaboration amongst The Center for Sustainability Studies of Davis & Elkins College, the Woodlands Development Group of The Randolph County Housing Authority, WV University Extension Service, students from Davis & Elkins College introductory and senior level sustainability courses and GreenWorks! club, and local residents of the Highland Meadows Community. It was intended to bring edible public open-space to the Elkins community, via the creation of a low- maintenance, high-yield, permaculture-based public park. Rather than an expansion of the successful seasonal community garden program, this urban agricultural park sought to reestablish public green space and maximize local food production of perennial species (e.g. apples, peaches, mulberries, cherries, raspberries, blueberries, nuts, and medicinal herbs) and support the creation of sustainable urban landscapes. Although adjustments to partners, location, and methods of success measurements were required and approved mid-grant period (original site was with a different partner in downtown Elkins, with different audience), the overall goals of the project were exceeded. The completed space, within the City of Elkins in the accessible detached-home community of Highland Meadows, will provide future opportunities for nutrition education, introduce local citizens to fruit, nut, and berry production, and eventually provide nutritional supplement for low income residents who would not otherwise have access to fruits and nut species.

Further, the project incorporated a student internship and classroom to community outreach into the program. In keeping with the determination to establish and teach sustainable practices, heritage species and varieties providing greatest yields with the fewest inputs were featured.

PROJECT APPROACH - GOALS AND OUTCOMES ACHIEVED- BENEFICIARIES

The Randolph County Edible Park Program (RCEPP) sought to provide space and other necessary supports (including material and education for the novice) for residents to grow low cost and nutritious foods. Further, it was the intent of RCEPP to promote an edible park model accessible across the region, in a variety of economic and social settings.

Goals during the grant period, from the original proposal, included the establishment of a 7,000 square foot edible park garden and educational sessions, through community and partner involvement. The use of heritage-style vegetable plants and fruit trees, lessons of nutrition and tree and plant care, involvement of a student intern and volunteers, and economically challenged families were key aspects of the original project.

The project was originally slated for a vacant lot in downtown Elkins, owned by the Randolph County Commission. This property was unexpectedly and suddenly sold to a private developer in the fall of 2013, necessitating a change of site, partners, and measured outcomes. The Sustainability Studies Program of Davis & Elkins College afterwards sought a new property, and in the process renewed a previous partnership with the Woodlands Development Group of The Randolph County Housing Authority, and their related program Highland Community Builders (MOU attached). This change was approved in advance by the West Virginia Department of Agriculture Specialty Crop Block Grant Program.

The new property, owned by Highland Community Builders (HCB), is located within the City of Elkins in an accessible-housing detached home community under development by the HCB. There are currently 11 homes built and occupied in the community, with 29 additional lots in development (Randolph County YouthBuild), including several surrounding a previously planned but unfunded public greenspace-greenway and wetland area. The homes are “green” structures, with energy efficient design and an eye to income savings for residents, but are located in a large open area, previously a fallow field. The neighborhood is open to the public, and the greenspace that was converted to the edible park garden is a connecting pathway from a shopping area to the neighborhood and surrounding neighborhoods.

The property provided more area and more educational opportunities than the previous arrangement. A 12,000 square foot, linear edible park garden was therefore established (5,000 more than expected and proposed) in the spring of 2014, along with a 300 foot pathway, benches, and community gardening areas. Replacement of previous partners for the project permitted an expanded educational role for the project (instead of several 4H students), incorporating multiple courses from the college and additional local volunteers.

The project was included in the studies of Davis & Elkins College Sustainability Studies degree program students, with 6 seniors in a capstone sustainability course guiding 5 freshman students in an introductory sustainability course. A senior student foreman was elected, committees formed, and the campus sustainability club GreenWorks! (6 persons) and the local neighborhood provided volunteer labor (5 persons) for the park build out.

The students advertised, arranged, and conducted community meetings to incorporate participant and neighborhood opinions and desires for the property (16 participants; list attached). Citizen recommendations within the scope of the grant program were used within a larger project proposal assignment submitted by the students, which was presented to the Highland Meadows community prior to the build out (12 neighborhood participants; list attached). Many of the students involved are from the local community (1 from the project neighborhood) and were invested in the outcomes and communication with public.

Hardscaping and infrastructure components were installed first, including a permeable pathway (photos attached). The pathway was created from recycled plastic permeable paver units and installed in a modular format, then filled with gravel. While not certified as ADA

compliant (cost prohibitive), the path is easily used by 2 local community members, one with limited mobility and one in a wheel chair. Other aspects of the hardscaping included a series of benches, birdhouses (donated by the US Fish and Wildlife Service), a bat house (donated by the USFWS), plus elevated gravel-mulched perennial fruit bush and herb beds. Savings and expansion of the garden site was achieved as wooden raised beds and a privacy fence were not required at the new site.

Eighteen semi-mature fruit and berry trees were planted within the garden space with the aid of partners and community members (including Peach, Mulberry, Apricot, Apple, Hazelnut, and Paw Paw). Additional varieties planted at the site include blackberries, blueberries, raspberries, rhubarb, strawberries (perennial varieties), and edible herbs and border plants including lemon balm, chives, thyme, parsley, oregano, day lily, mint, and ramps (wild leek). Attention was given to perennial fruit and nut bearing species with under-plantings of low growing edibles. The local WV Extension agent provided information on species selection and confirmation of hardiness and deer and rabbit resistance.

The project was fully supported by the residents of the immediate neighborhood (11 families, list attached), many of whom volunteered alongside students. There was also a generous outpouring of support by the community, where residents provided lunches and drinks for volunteers. There were a variety of families involved, of varying economic backgrounds and ages. The neighborhood was particularly welcoming to the student intern hired for the 2014 summer season, after the sustainability courses ended (chosen from students participating in course assignments). Neighbors provided use of hoses, buckets, and sprayers for tending and watering the plants as they were established. The student intern mowed the open grass areas, trimmed near the plantings, completed gravel distribution for the pathway, replaced several trees and shrubs that succumbed to a hot period of weather, and met with neighbors regarding future care and harvest of fruit and nut species. These duties, care of the plantings, and future education of homeowners have been assumed by the Highland Meadow Community Builders group (the college will provide student volunteers for future work as desired).

Informal (and often unarranged) workshops and education provided for the project by the seasonal intern and college staff and students included an open house event with explanations of plant choices and care (11 families; list attached), walk through tours of the garden area (several times over the season in groups of 3-4 persons each, as neighbors showed interest), and fielding of phone calls, in-person inquiries, and prepared maps and materials for the nearest neighbors (2 closest households have volunteered to care for perennial beds and shrubs). While the original methods of measuring project goals and to a limited extent the goals, were modified, documentation of the project was comprehensive, including communications of gratitude, photo documentation of volunteers, and multiple press pieces.

Particularly pleasing is the continued participation of residents from the neighborhood,

fulfilling one of the main goals of the RCEPP project - to provide access to low cost and nutritious food. Several families have been inspired by the current plantings and plan to invest their own funds and efforts next growing season to add additional fruit-bearing species. The pride evident in the neighborhood's adoption of the edible park garden, and use of the park-garden as place to relax and recreate, have been an added bonus, as are scenes of multiple generations tending plants throughout the season.

Feedback from the community has been quite positive, with several pieces in local and regional media, as well as letters of appreciation (links below and attached). In fact, this project, and previous Randolph County Community Agriculture projects of the Center for Sustainability Studies, including the micro-farm design and construction on the Westside of Charleston, were featured in the spring-early summer edition of *West Virginia Living* magazine, within a piece on leadership in community agriculture in WV (attached).

LESSONS LEARNED

The most significant challenges included a loss of the originally planned site (described previously), as well as modification of partner involvement and adjustment of educational, outreach, and success measurement opportunities. There was initial concern about a need to decline the funding opportunity, but the location of another, more suitable property allowed for a better overall result, with a more widespread reach.

Unexpected also was the concern of the new partner (HCB) about potential burdens to the neighborhood of future care for the edible park area (greenspace is to be assumed by them after 50% of homes have been built). These concerns were addressed through adjustment of fruit tree and shrub species chosen, with an eye for low maintenance varieties which would not need a lot of pruning or pest control. Also addressed was the need for adequate spacing for open grass area care and maintenance of the pathway (extra gravel placed in storage for later addition). Neighbors and community members provided feedback and guidance in the design to help with these concerns.

Also, the new site is located under a medium-sized electricity transmission line, with associated restrictions for plantings and development. All hardscaping was required to be low in height, plantings of a low growth, and the pathway of a material that would support large trucks in the remote possibility repairs to the line were required. The students involved and the seasonal intern were able to address these issues however, through careful communication with the power company and additional research on plant varieties. The site could prove to be a lesson for other communities that wish to create gardens in un-utilized space under power lines.

Other lessons learned, especially by students and neighborhood members, included the pressure deer and rabbits can place on an open fruit garden. While some damage was sustained, the seasonal intern was quick to identify the problem, and the project provided spray and repellent.

The public space aspect was also of concern for the original site and a low fence was part of the design. However with a close-knit community at the new site this has not been an issue.

Goals for the project were attainable and realistic.

Although this SCBG project is complete, future plans include a fourth community garden in Elkins prior to the 2016 season, dependent upon funding. The immediate goal of the college Sustainability Program and the garden group is a single community garden in the other city wards of Elkins by 2018. Although the current gardens will be largely self-sufficient in future seasons, establishment of new city community gardens will require another similar grant and commitment.

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ADDITIONAL INFORMATION

Please see attached photos, magazine article, community participant list, project memorandum of understanding, letter of appreciation from the primary partner, as well as the following links.

<http://www.wdtv.com/wdtv.cfm?func=view§ion=Fox-10&item=Davis-and-Elkins-Students-Put-Green-Thumbs-to-Good-Use-15601> (WDTV coverage of the edible park build-out, including interviews with student foreman and volunteers)

http://issuu.com/wvliving/docs/wvl_spring2014_issuu/89?e=11467873/7676336 (WV Living Magazine Article featuring the community garden and edible park projects)

<https://www.facebook.com/highlandmeadowswv> (Highland Meadows neighborhood)

<https://www.facebook.com/groups/249911561727923/> (Randolph Community Gardens)

PROJECT TITLE

Bee Active In Youth

Amount Awarded: \$6,000.00

PROJECT SUMMARY

With the aging population of beekeepers and the decreasing numbers of honeybees we saw a need to bring a younger group of people into the world of beekeeping to increase not only the number of beekeepers but the number of apiaries.

The number of beekeepers is diminishing due the age of the current beekeeper population. As we lose beekeepers we lose the number of honeybees due to the decrease of managed apiaries.

To increase the number of beekeepers and lower the average age of active beekeepers we started our youth program. Since receiving the grant we have added 17 new, younger beekeepers in our area.

We did not build on a previously funded project with the SCBGP or SCBGPFB.

PROJECT APPROACH

Participant youths were given a six week course in the beekeeping and assigned a mentor to help and guide them. Subjects taught in the beekeeping course included classes on bee biology, necessary equipment needed, installation of package bees and Nucs, how to identify pests and diseases and how to treat them, what to expect your first year as a beekeeper, seasonal management, bee friendly plants, products of hive, extracting honey from the comb. After successfully passing the beekeeping course each participant was given two hives, two packages of bees and all equipment needed to start their own apiary. Their mentor guided them in all aspects of beekeeping for a two year period. After the two year period the participants continued to be given assistance on an as needed basis.

The West Virginia Beekeepers Association started the youth program in 2010 with two participants and added an additional two more in 2011, 2012, and 2013. In 2014 we added an additional 4 youths and in 2015 we added 11 youths. In total, during the grant period we had 17 participants in our program and as of July 2015 85% of the participants have continued to have a honey bee apiary.

GOALS AND OUTCOMES ACHIEVED

The goal of the WVEPBA youth program was to find young people aged 12-17 years of age that were interested in becoming beekeepers, train them, and supply them with the necessary equipment and skills to become lifetime beekeepers. With the help of the grant monies provided we were able to equip and train 18 young people during the grant period. One participant from our class of 2013 continued her studies into beekeeping when she went to college and was chosen to participate in beekeeping research projects. Of those 17 participants 14 continue as beekeepers with a total of 34 colonies. During the three year grant period our youth participants were able to harvest 330 pounds of honey from their hives. One hundred pounds of that honey was sold by the club at \$5.00 per pound at the annual Honey Festival and will be used for future youth participants. No honey production is expected in year one of beekeeping. The first year is mainly concerned on

learning on how to take care of the bees and allowing them to build comb for honey production. Honey production and extraction is started in the second year. Since this was the first year for the largest number of participants we did not expect any honey production for them but three participants were able to harvest 90 pounds of honey total. We are expecting this large class of 11 youth to produce at least 30 pounds of honey from each of their hives in the spring of 2016 for approximately 600 pounds total.

Our project partners included clubs from other counties within the state of West Virginia. They provided teachers for specially held workshop to further educate our youth participate. This helped our participants gets a view into the many different approaches to beekeeping as performed in various localities.

BENEFICIARIES

It is not hard to point out particular beneficiaries from this project because really everyone in the world benefits from the addition of beekeepers and honey bees. Farmers benefit from the additional pollination achieved to increase their production, people benefit from the additional food production by farmers, flowers continue to bloom for the beauty of everyone due to the honey bees' pollination. Everyone that enjoys the taste of the various varieties of honey made possible by honey bees benefits from the bees production of honey.

Of the honey produced and harvested one third was given back to the WVEPBA to be used as a fund raiser to help fund the youth program. To date we have received \$500.00 for that purpose. The remaining two thirds was retained by the participants and they used their honey in a variety of ways. Some gave gifts to friends; some used their honey to raise money for school projects like band and sports activities.

We estimate that of the 34 hives still thriving our participants have added an extra 1,440,000 honey bees to our locality. The largest percentage of those bees, the foragers, are each pollinating approximately 5,000 plants a day.

LESSONS LEARNED

As part of the requirements to be in the program each youth had to give at least one talk to an area organization such the boy or girl scouts, church youth group, or 4-H club. At the end of each year they were also required to present to the members of the WVEPBA a talk on what they had learned and accomplished.

By being careful and screening our applicants we choose those we felt were best suited for our program and achieved what I believe to be a successful program. We will continue to add a minimum of two new youth participants each year. Our classes are structured in a way that gives the beginning beekeeper a broad view of beekeeping and by following up with each youth and mentoring them over a two year period they receive training to become a successful beekeeper. I believe we have achieved that objective in our program. Although there is a great interest in becoming a beekeeper not everyone is cut out to become one. Beekeeping has a high learning curve and you must know not just how to put the bees in a box but also their biology and history, some chemistry, and be willing to put your bees first. You work on their schedule, not yours.

Our original plan was to keep the hives in one location to make it easier for our mentors to meet with the youth in groups and make it possible for them to see the different scenarios possible in the hives. This past year we decided it was best to have each youth keep their hives on their

property so that they could keep a better watch on them. We then had once a month group meetings at a mentor's apiary to go over possible problems and seek resolutions to those problems.

CONTACT PERSON

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PROJECT TITLE

“UV Treatment of Trout Effluent to Improve Food Safety of Salad Greens Produced in a Cold Flowing Water Aquaponic System”

Amount Awarded: \$20,000.00

PROJECT SUMMARY

Aquaponics is a method in which fish and plants are grown together. The fish waste provides nutrition to the plants. The plants, in turn, filter the water by removing or converting nutrients from the fish waste. However, fish waste may contain pathogenic bacteria that if incorporated in the plants may harm consumers.

This project measured the amount of coliform bacteria in an aquaponic system producing lettuce which drew nutrients from a cold flowing water system growing trout. Investigators measured amount of coliform bacteria in the in the aquaponic system and determined antimicrobial efficacy of treating the water with ultraviolet light as a means to improve food safety of lettuce grown in the system.

Aquaponic lettuce production represents a new product for fish farmers across the country that would complement the fish products sold by these farms – especially in local markets. Although consumption of vegetables is associated with reduced risk of many chronic diseases including highly prevalent heart disease in West Virginia, currently Americans are eating only slightly above half of the vegetables intake recommended the USDA dietary guidelines. For aquaponic products to access the market, it must be safe and perceived to be safe by the consumer. Aquaponics is a relatively new agriculture practice and its microbiological safety has not been assessed.

PROJECT APPROACH

The experiments were designed and carried out. The necessary adjustments to the WVU aquaponic experimental farm in Wardensville were completed. The experimental UV unit was selected, purchased, installed, and tested. Field experiments, subsequent model study, and data collection were completed. The collected data was analyzed and presented at two scientific/trade meetings. Master’s thesis was prepared and defended specific to the outcomes of this project. Two manuscripts were drafted and their revisions are currently under way with an intent to submit them for scientific publications in peer-reviewed food science/microbiology journals. This study was designed to document and improve food safety of the lettuce grown in an aquaponic system.

Drs. Jaczynski and Semmens worked with Mr. Ferrell on setting up the WVU experimental aquaponic farm in Wardensville. A graduate student at MS level was recruited, trained, and defended his thesis. Mr. Moriarty conducted the experimental field and analytical laboratory work. He collected water and lettuce samples from the experimental aquaponic system for microbiological examination. Dr. Bissonnette also

assisted with the experimental design and data analysis/interpretation. The personnel listed above are no longer at WVU except Dr. Jaczynski.

GOALS AND OUTCOMES ACHIEVED

The measurable outcomes were accomplished in that no coliforms were found in the lettuce grown in the aquaponic system. Additionally, UV light treatment proved very efficacious resulting in a significant reduction (i.e., 3-log) in total coliforms. This study demonstrated the efficacy of UV light treatment as well as a guideline to the proper dose necessary for inactivating coliforms in an aquaponic system. The actual accomplishments overlap with the goals established for the project.

The project has been successfully completed. The baseline data was unavailable prior to the initiation of the project. However, as indicated above, the most important achieved outcome was that (1) no coliform were found in the aquaponic system and (2) the UV light efficiently reduced coliforms in the aquaponic system were successfully hypothesized and demonstrated.

The results were presented at the Institute of Food Technologists (IFT) Annual Meeting and Food Expo in 2014. IFT is the largest professional organization for food scientists/technologists in the world and the IFT Annual Meeting typically attracts about 20,000 people. The research presentation was well attended and an estimated 100 attendees have seen the results. The abstract has also been posted on IFT.org for increased visibility and accessibility. However, at this point it is hard estimate how many times the abstract has been downloaded. The research results were also presented The Tenth International Conference on Recirculating Aquaculture in 2014. Although this was a smaller conference that the IFT Annual Meeting, it was more focused and related to aquaculture only. An estimated 100 people attended the our presentation.

Drs. Jaczynski and Semmens designed the system and built it, as well as provided an oversight to the project. Mr. Moriarty was responsible for every day maintenance, lab work, and data analysis. Mr. Ferrel assisted with every day maintenance. Dr. Bissonnette assisted with experimental design and data interpretation.

BENEFICIARIES

Two main beneficiaries for this project were identified. West Virginia (and surrounding states) fish farmers who are working cooperatively with specialty crop producers with creation or expansion of crop production in mind and, conversely, specialty crop producers interested in partnering with aquaponics producers to increase crop production with an emphasis on safe food production.

The advantages of incorporating the production practices identified in this study include no coliforms were present in the lettuce grown in the aquaponic system. Additionally, UV light showed a significant reduction (i.e., 3-log) in total coliforms. This study demonstrated the effectiveness of UV light as well as a guideline to the proper dose necessary for inactivating coliforms in an aquaponic system.

As mentioned above, research results were presented at two national-level meetings. Our

presentation was well attended by an estimated 100 people at each meeting. In addition, our published research abstract is available from the IFT.org abstract archive. As with online resources, our research abstract has likely been downloaded several times, although it is hard to estimate how many times.

LESSONS LEARNED

Aquaponics is a new technique that offers current fish farmers a way to make their business more profitable without much extra effort. Aquaponics should be perceived as eco-friendly since fish waste is used as a source of nutrients to grow vegetables. This way fish waste is naturally recycled. UV light is an efficient means to maintain high standards of microbial safety of aquaponically grown vegetables.

The UV systems requires regular cleaning so that the UV light actually reaches the water. Although it is a simple and quick task, it needs to be performed on regular basis.

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ADDITIONAL INFORMATION

One of the two abstract presented at 2014 Annual Conference of the Institute of Food Technologists is available from the IFT.org online archive system.

(<http://search.proquest.com/docview/1651981921>)

Aquaponic system in Wardensville before
planting UV light system installed in the
aquaponics system to control coliform



Lettuce growing in the aquaponics system in Wardensville.



Graduate student performing field experiment



PROJECT TITLE

Ronceverte Community Garden

Amount Awarded: \$10,000.00

Project Summary

Many residents in Ronceverte lacked access to land that is suitable for growing food. Establishing a community garden in Ronceverte would provide residents access to suitable land and result in increased production of specialty crops, such as fruits and vegetables. The community garden provides Ronceverte youth an opportunity to participate in the garden where they will acquire agricultural skills and sample fresh locally-grown produce. It is widely accepted that these experiences help develop healthy eating habits and increase demand for fruits and vegetables.

This project converted an unused area of Island Park in the City of Ronceverte into a community garden. The site covers approximately one-half of an acre and contained an irreparable swimming pool; several related structures; a children's pool; and a pool deck. The site, while not suitable for use as a community pool, was an ideal site for a community garden. The land is flat, it is located along the Greenbrier River, and it is completely fenced. Repurposing the former city pool and its surrounding area into a community garden will make use of the existing infrastructure and turn an unused parcel of public land into a thriving centerpiece of Island Park.

This community garden project was a timely addition to an ongoing Eco-District planning process taking place in Ronceverte. The garden benefits from being part of a formalized city-wide plan that includes developing local food opportunities and community agricultural projects. It will also serve as a model for community-based urban agriculture for other small towns throughout West Virginia.

PROJECT APPROACH

List of completed activities:

- Completed meetings with RCGA (June 2013)
- Created layering plan for community garden (July/August 2013)
- Created Composting plan for community garden (August 2013)
- Created community garden guideline/rule example document (August 2013)
- Created Water catchment plan for community garden (August 2013)
- Created Irrigation plan for community garden (August 2013)
- Design and plan for community garden (March 2013)
- Create Visual Representation of the Garden for Outreach (April 2013)
- Compiled lists of supplies needed (April/May 2013)
- Cost estimates completed (April/May 2013)
- Compiled lists of supplies needed (April/May 2013)
- Cost estimates completed (April/May 2013)
- Project plan meeting (May 2013)
- Compiled tasks for Ronceverte Community Garden Association (June 2013)

- Harbor Engineering: preparation of sketch for pool; site evaluation; structural analysis (June 2013)

The Ronceverte Community Garden (RCG) then facilitated the actual construction and development of the site along with their partners and their other funding opportunities. DS's role has been to collect information from them on the project.

Downstream Strategies conducted the research and project plan for the community Garden **Harbor Engineering** prepared site evaluation and structural analysis **Ronceverte Main Street and Ronceverte Community Garden (RCG)** conducted construction activities and community outreach and recruitment **City of Ronceverte** provided fill and construction support for the project **Area volunteers** provided labor to construct the project

GOALS AND OUTCOMES ACHIEVED

Summary of progress towards achievement:

1. Garden project has been completed (please see RCG supplied photos below). They received in-kind assistance from the City of Ronceverte as a new water hookup, 12 truckloads of shale, transportation of materials and a local company donated \$500 of gravel needed.
2. Pool is now a community garden site that hosted participants starting in 2014
3. Main Street Ronceverte/Ronceverte Community Garden (RCG) operate the garden and events.

Goal: Increase the production of specialty crops in Ronceverte Benchmark:

No specialty crops were being produced on the site

Result: in 2014 over 1,000 lbs of specialty crops were produced on site.

Extended outcome goal: Produce at least 4,000 lbs of product onsite. – RCG is working on their 2nd season and hopes to meet this goal.

BENEFICIARIES

Many groups and individuals have benefitted from this project.

- Area gardeners: benefit to 10-15 farmers and their families from additional growing space and fenced area;
- Community Members: benefit from opportunity to grow own food and learn about specialty crops, benefit from greater access to healthy food choices; the garden site is a perfect adjunct to the community healthy trail on the perimeter of the garden benefitting the Ronceverte population of 1,766 citizens;
- Ronceverte Main Street: Benefits by having a local area to conduct education and awareness;
- Potential farmers market producers: benefit by having a local area to grow as well as a future market;

- City of Ronceverte: benefits from having a safety hazard transformed into a thriving garden site. Benefits from higher community well-being.

Data from the Ronceverte Community Garden (RCG)

- Approximately 1,000 lbs of produce was grown and consumed by members and the community. In 2015
- 90% of the beds were rented before June 7, 2014 (for Summer 2014)
- Community beds produced pumpkins, corn, strawberries, tomatoes and squash that were distributed between members or donated to the community.
- 45 raised beds

LESSONS LEARNED

There were some challenges for the RCG organization to get established and the implementation happened later than originally planned. The organizations low staffing was one challenge and extended winter slowed the construction. Once RCG was established they were able to meet the challenges and continue the project. DS finished the planning portion of this project in 2013. Since then RCG has been responsible for the project.

The RCG operated the community garden in 2014 with local participants, remaining work includes irrigation, season extension, and water catchment. They also hosted a community workshop for gardeners. RCG indicated that the rest of the water catchment will be installed and operating this Spring (2015).

Unexpected benefits provided by the RCG include the high visibility area in the local park which provides greater outreach to community members, and the social benefits between participants and the community. These activities have helped influence the community towards a more healthy lifestyle.

CONTACT PERSON

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March 2015



March 2015



Summer 2014



Summer 2014



Summer 2014



Spring 2014



Early Spring 2014



Location before Development- 2012

PROJECT TITLE

“Buy Local in Mingo County”

Amount Awarded: \$14,000.00

PROJECT SUMMARY

According to the West Virginia University Small Farms Center, more than 90% of the food consumed in West Virginia comes from outside the state. Average food expenditures per West Virginian citizen are about \$3,400 per year. If you multiply this average by the population of Mingo County, it can be assumed that there is about \$89.7 million in annual food expenditures within the county. Thus, if Mingo County consumers spent just 10% of their food dollars on food that was produced and processed by local farmers and businesspeople, some \$9 million could be infused into the local economy. For this to occur, sales outlets must be in place for local food to be sold to consumers, and local producers must be encouraged to build their capacity and to market their food locally.

The Williamson Redevelopment Authority’s Buy Local in Mingo County project was established to begin chipping away at this challenge. The goal of the project was to enhance the competitiveness of specialty crops by improving the quantity of fresh fruits and vegetables sold locally and improving the quality of locally grown produce that goes to market. During the first reporting period, the Mingo County Orchard site was the target agriculture site for increased production. After a change in project scope was approved in April 2015, the Williamson Community Garden, Tug Valley High School and Newtown agriculture Mine Site were added to the Buy Local in Mingo County project. The goal was to improve yields of fresh fruits and vegetables at these sites to be distributed to the local schools, restaurants and farmers markets. Veterans and youth were incentivized to grow food by offering them stipends for their labor at these sites. Additionally, the project helped spark the implementation of a community kitchen project. This Mingo County community kitchen development is currently underway, and will ultimately provide a space for growers to process and further enhance their products.

These agriculture sites help generate a revenue stream for the Williamson Redevelopment Authority local foods projects and contribute to the operational expenses at the local market. The “Buy Local” campaign promotes local food projects and encourages consumers to buy fresh fruits and vegetables.

This project did not build on a previously funded SCBGP or SCBGP-FB.

PROJECT APPROACH

The following accomplishments illustrate our progress towards reaching the overall goals of the Buy Local in Mingo County project. During the first reporting period the following accomplishments were reached:

- Appalachian Leadership Academy fellows helped coordinate agriculture trainings at two sites. Fellows worked with local food coordinator Maria Arnot to contact West

Virginia State University Agriculture Agents to schedule the workshops. Expert's recommended integrated techniques to eliminate diseases, which began to improve quality of produce and make products more marketable.

- Several workdays were held at two new sites, the community garden and Newtown site for integrated pest management work, disease control and to improve soil quality. Based on the recommendations of Dr. Rahman and Dr. Frank, in 2013, sprays were purchased, including Kaolin Clay and Pyganic. In 2014 we experimented with fish emulsions and Spinosad, based on recommendations from Grow Appalachia staff, which have improved the quality of produce.
- The My Mobile Market was launched in the summer of 2014 and helped to market specialty crops outside of Williamson on a biweekly basis. The market traveled to six different sites throughout the county.

Following the mid-year report, and after the re-scope of "Buy Local in Mingo County" was approved:

- Kathy McCoy was hired as the Community Kitchen Coordinator
- Kathy McCoy met with Teresa Halloran of the West Virginia Department of Agriculture (WVDA) to discuss the opportunity for opening a community kitchen in her restaurant, Wingo's Grill, which is only opened on Fridays and Saturday. McCoy also attended Better Process Control School with two other individuals, Paula Reed and Maria Arnot
- Growing Warriors site Coordinator Jason Linkenhoker identified five veterans to work on the three agriculture projects supported by Specialty Crop Block Grant Funding
- Two students helped sell locally grown produce at the Farmers Market and Mobile Farmers Market
- Workshops were held to promote food preservation and food safety
- 34:Ate and the Grid Iron Skillet, two local restaurants, have made purchases from veteran growers
- The Williamson Farmers Market has featured three new vendors this summer, and has seen an increase in customers with more than 200 individuals attending the market each week
- My Mobile Market purchased vegetables from Growing Warriors veterans to be sold at two markets held in Gilbert, WV and Delbarton, WV

- A Master Gardener program was started in Mingo County, and six veterans attended the 10-week gardening course

In order to ensure that the Specialty Crop Block Grant Funds were used solely to enhance the competitiveness of specialty crops, the funding was used specifically on sites that were already producing specialty crops. This included the Williamson Community Garden and Tug Valley High School. Additionally, project funds were used to support the Newtown Agriculture Site, which will eventually be a U-Pick Berry Farm. All specialty crops grown on these sites had predetermined markets (the Mobile Market, the Williamson Farmers Market and several local restaurants), which guaranteed sales and increased the amount of specialty crops to market. Throughout the project, inputs such as proper integrated pest management techniques, weed management, and disease control measures were applied. Additionally, growers attended frequent trainings on implementing these techniques to ensure that they were producing the best, most competitive product they could.

Project Partners

Williamson Farmers Market Farmers Market Manager Helen Stanley documented sales from harvested from local food sites that were sold at the market. In 2014 there were 2737.37 pounds of produce harvested.

WVU Extension Agents Dr. Rahman and Dr. Daniel Frank hosted Integrated Pest Management and Disease Control workshops at the Mingo County Orchard. Additionally, extension agents traveled to Mingo County to host gardening sessions for the Master Gardening program.

City workers have transported supplies to and from the orchard, and help to maintain the community garden site.

Williamson Redevelopment Authority volunteers hosted and did outreach for all workshops.

My Mobile Market was launched in 2014 by the Williamson Redevelopment Authority. The mobile market provided an additional outlet for specialty crop sales, as it operated during the week.

Master Gardeners hosted cooking demonstrations using specialty crops to help increase sales at farmers markets. There were also three canning workshops during the grant cycle to teach growers how to add value to their products.

Growing Warriors Site Coordinator Jason Linkenhoker identified five local veterans to work on agriculture projects including the Ramella Park Community Garden and Newtown Mine Site Workshops- Canning, food safety 101, composting,

Tug Valley High School's Agriculture Teacher Angie Fisher identified students that would work at specialty crop block grant agriculture sites

Appalachian Leadership Academy Students helped advertise garden workshops and Mobile Market events

Wingo's Grill agreed to get their kitchen certified by December 2016 for shared use. Vendors will be able to rent the space to add value to their specialty crops

Natural Resources Conservation Services sent a soil scientist to Newtown Mine site to take

soil samples and offer ways to improve the soil

GOALS AND OUTCOMES ACHIEVED

Employing the goal chart from our original proposal as a tool to measure progress, the following achievements were accomplished during the “Buy Local in Mingo County” project.

During the first reporting period The “Buy Local in Mingo County” project effectively improved growing techniques at the Mingo County Orchard as well as at two new Mingo County Sites by providing regularly scheduled workshops and trainings for participants. Local Foods Coordinator Maria Arnot worked with West Virginia State University Agriculture Agents to host two Integrated Pest Managements training in 2012 and 2013. In 2013, there were 21 participants at the Integrated Pest Management workshop, and 64 individuals in attendance at the Disease Control workshop. In March the We Are All Farmers Permaculture Institute traveled to Williamson for a two-day Permaculture workshop, sharing natural solutions to increasing soil fertility and managing water at the orchard. There were 27 people that attended this two-day workshop.

In 2014, Grow Appalachia Director David Cooke visited the Williamson Community Garden and suggested additional soil amendments including Copper, Spinosad, and fish emulsions. Additionally, there were two canning workshops held to teach growers how to safely preserve their specialty crops for market. These workshops had 10 and 14 participants respectfully.

During the final reporting period, we were able to increase the number of food growers working on agriculture sites from 3 to 8. The “Buy Local in Mingo County” project successfully recruited more than five local veterans and three tug valley agriculture students to work on specialty crop block grant approved agriculture sites. While we did not meet our goal of hiring 6 student interns as listed as an expected outcome, we were able to hire three reliable students, and intend to identify new youth partners in 2015- 2016.

To achieve the goal of creating production plans for two sites, Joshua Stainthorp of Tap Root Farms was hired and plans were created for both the Ramella Park Community Garden and Tug Valley High School. This will help increase production during the 2015- 2016 growing season. Additionally, several workshops were hosted in 2015 to promote food preservation and food safety. Workshops included Canning/ Food Preservation with Dana Wright, a Mushroom Production workshop, and Food Safety 101 with extension agent John Porter. Combined, more than 45 people attended these workshops. A Master Gardener program was also established in Mingo County this May. Six veterans attended the 10-week gardening course alongside 17 other community members that benefitted from these classes.

Future Plans: Long Term Goals

After the change of scope was approved in April 2015, there was a very short window (three months) to complete the Buy Local in Mingo County project. Therefore it was a challenge to meet some of the newly established goals and objectives. However, progress was made towards achieving many of these outcomes.

As a result of poor soil conditions, growing at the Newtown mine site was postponed until 2016. Experts continued to build soil by taking samples and adding soil amendments such as lime and fish emulsion. In March, a production guide was completed for this site by veterans from the Growing Warriors Project. In 2016, the plan is to have a high tunnel completed and

have berry production in full swing at the mine site. The Growing Warriors team also applied to host an AmeriCorps National Civilian Community Corps team in the fall. If assigned this group, they will be asked to work on the site and continue to build the soil.

In order to accomplish the goal of establishing a community kitchen in Mingo County, a kitchen coordinator was hired to begin researching and implementing these plans. The kitchen coordinator, Kathy McCoy Met with Teresa Halloran with the WV Department of Agriculture to discuss potential Community Kitchen start up requirements. Additionally, Kathy learned how to submit products to the WV Dept. of Agricultural for manufacturing flow charts. Kathy also began identifying individuals that would utilize the kitchen by meeting with vendors from the Williamson Farmers Market.

BENEFICIARIES

Five Growing Warrior veterans received stipends to support their agriculture work, and sold their products to local markets

Tug Valley High School agriculture program received a production plan designed for their site. Students had the opportunity to receive stipends for their farm labor

Four students were hired to work on local agriculture sites that were producing specialty crops.

Wingo's Grill owner Kathy McCoy was hired as the Kitchen Coordinator. Utilizing her kitchen for the community kitchen will benefit her business, as individuals that use the kitchen will be charged a small fee per use

More than 20 individuals completed processing trainings to prepare them for utilizing a community kitchen properly and safety.

My Mobile Market began seeing an increase of veteran grown produce in June 2015 that was sold at markets throughout the county. The Mobile Market amassed approximately \$500 in revenue at each mobile market location. Veterans sourced tomatoes and a variety of peppers to the market.

34: Ate and Grid Iron Skillet received fresh produce grown by veterans that was sold at their restaurant

Approximately \$2,000 in sales were made from specialty crops produced at the Community Garden and Sprigg. In order for the Growing Warriors veterans to see the monetary value, as well as the benefits of growing their own food, sales made by veterans went directly to veterans. This ensured that veteran farmers directly benefitted from profits, food dollars stayed within the local economy, and there was an increase of fresh produce to market.

Overall, the economic impact was vast. Nine individuals were employed part time during the 2015 growing season and received farm training. This will hopefully inspire these farm entrepreneurs to continue this work in the future. Additionally, while the economic impact of the community kitchen cannot yet be accounted for since it just opened, it can be assumed that the economic impact of this project will be far reaching.

LESSONS LEARNED

Unfortunately, it was concluded during the first reporting period that the Mingo County orchard had been infected with several fruit tree diseases. This delay forced us to

make some unexpected adjustments to our work plan, and altered the time frame in which our team intended to reach previous goals. Specifically, the production of specialty crops from the orchard was lower than previous years due to disease, and access to the site became an issue. In order to address these challenges, we began searching for alternate more productive sites that would help us reach our goals of increasing specialty crop production, as well as the variations of specialty crop products sold locally.

Although the amount of specialty crops being produced was low in 2013, we were able to make up some of that loss in 2014 with the addition of the Williamson Community Garden and Newtown Mine Site. In October 2014, in order to fully incorporate these sites into our scope of work, our team submitted an official re scope proposal. While writing the re-scope, we focused on making the 2015 measurable outcomes more realistic and attainable, and narrowed our focus down a bit.

After the change the scope was approved, there was a very short window (three months) so complete the project. Therefore it was a challenge to meet some of the newly established goals and objectives. However as aforementioned we began working to achieve these goals and accomplished as much as we could during the project period.

We believe that this project ended up being extremely successful. Our goal was to increase the number of people growing local foods (specifically veterans and youth), and to increase the supply of local produce being sold at farmers markets and restaurants, and we accomplished both of these.

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ADDITIONAL INFORMATION



PROJECT TITLE

**“Morgan County Specialty Crop Education and Marketing Initiative” Amount
Awarded: \$8,000.00**

PROJECT SUMMARY

The purpose of the project was to increase the supply of and improve the marketing for specialty crops in Morgan County and its surrounding counties by providing education and promoting skills development for existing and new specialty crop producers in the Eastern Panhandle counties of Berkeley, Jefferson, Hampshire and Morgan. The end result to be an increase in the supply of locally produced specialty crops in Farmers Markets, CSAs, Farmstands, schools, hospitals, restaurants and other retail outlets.

The motivation for the project was the increasing demand for locally grown specialty crops and the lack of a sufficient supply and variety being offered for sale.

This project was an indirect followup to substantially aid in the momentum for specialty crop production and marketing begun with a Specialty Crop Block Grant given to the Morgan County EDA Agriculture Task Force in the Fiscal 2008 Funding Cycle

The previously completed work identified the farms in our county producing specialty crops and indicated that there was a noticeable lack of such production. We expanded our reach to producers outside our county who were already growing specialty crops or who were beginning to do so.

PROJECT APPROACH

In Year 1 of the project (2012-13)

We conducted two local workshops for Specialty Crop producers, one focused on what to grow and the other on the business of specialty crop production. Both workshops were conducted by staff from WVU Extension Service. Both were very well attended.

We attempted a second workshop on producer business practices, but were unable to gain enough participants to do the workshop.

We drew up a plan for a cooperative sales booth to sell specialty crops at our Farmers Market but did not have any participants during the 2013 season. We also used grant funding for a trip to Phillipi, WV to look at the Heart and Hand House co-operative store that sells specialty crop produce for local farmers.

In Year 2 of the project

We amended the grant to direct funding for education related to specialty crops to fund scholarships to regional farming conferences, instead of providing local educational workshops. Due to timing constraints, we were only able to give one scholarship to one producer’s family to attend the WVU Small Farms Conference in 2014. In our followup with that producer, we found that he had not actually produced any specialty crops for sale that we know of.

We implemented the co-operative consignment booth at the Berkeley Springs Farmers Market, running it from June through October of 2014, allowing only items that meet the definition of Specialty Crops for sale at the booth. We deem this a success. We hired a contractor with experience in the farmers market to run the booth. The contractor was paid entirely with Specialty Crop Block Grant funds. There were 10 participants who brought specialty crop items to

be sold at the booth. Total co-op income for the season was \$2,335, which we deem a success. Income from the sales (20% of the total income, or \$467) was used to purchase supplies and materials for the booth and to pay the Farmers Market booth fees. The remaining 80% was paid to the producers. The consignment booth brought some specialty crop items into the market that no regular producer was selling, for example, cut flowers and quince. We also spent grant funds to hire an IT person to develop an Excel- based accounting system for tracking sales and paying the producers. We continue to use it in 2015.

We re-purposed the grant funds initially directed toward a farm-to-school seminar to paying for the labor to raise the first ever high tunnel at a Morgan County school (Warm Springs Intermediate School). The school is actively using the high tunnel to educate the children.

In Year 3 of the project (2015)

We provided scholarships to the Chesapeake Alliance for Sustainable Agriculture's (CASA) annual conference in January, 2015 for 4 specialty crop producers and to the Pennsylvania Assoc. for Sustainable Agriculture (PASA) annual conference (February, 2015) for 8 specialty crop producers and to the WVU Small Farms Conference in Feb. 2015 for 2 specialty crop producers, one of whom is a high school student.

In order to receive a scholarship all were required to report back, listing the sessions attended at the conference, to grow one or more specialty crops that they learned about at the conference, and keep records pertaining to at least one crop grown, along with amount harvested, where it was sold, how it added to farm income, and any problems associated with it. At this point, we are still in the growing season for 2015.

We also used the small amount of remaining funds to operate the consignment booth from July through September, 2015, again accepting only specialty crops for sale at the booth. As of this writing, the income from the consignment operation is just over \$3200, a bigger success than in 2014. The total income for the season in 2015 was \$5942, of which 75% went to the producers and 25% was retained for expenses: booth fees and supplies, with the remainder put in reserve to pay for a contract person to operate the booth in the 2016 market season. None of the income was or will be used for general operating expenses or other programs.

GOALS AND OUTCOMES ACHIEVED

1. Our approved, revised use of grant funds allowed us to award scholarships to regional farming conferences (Pennsylvania Assoc. for Sustainable Agriculture conferences, Future Harvest Chesapeake Alliance for Sustainable Agriculture, and WVU Small Farms Conference) instead of providing four workshops of our own to the specialty crop producers. We provided scholarships to cover registration and in some cases lodging at the above conferences to 7 producers. Five of them either did not have records of the previous growing season's yield of specialty crops or had not grown any and thus had nothing to compare to the 2015 growing season. One decided to move to a new farm in the spring of 2015 and did not have any production during the 2015 season. Another had been the farm manager of a non-profit organization's farm and decided to leave the farm that spring. Therefore, we unable to measure the increase in total specialty crop products for producers.

2. The funds allocated to a business planning and marketing seminar were re-directed to the producer scholarships to conferences (Pennsylvania Assoc. for Sustainable Agriculture conference, Future Harvest Chesapeake Alliance for Sustainable Agriculture, and WVU Small Farms Conference). Business planning sessions at those conferences were not generally available.
3. We did not create a formal, written Farm to School plan for a pilot program for the Morgan County School because we discovered that the WV Office of Child Nutrition had already given the schools funding and policy on buying directly from local farmers for their fruits and vegetables programs. We held 4 meetings with the Morgan County Schools' Director of Nutrition and also met with producers who were interested in selling to the schools. Our AmeriCorps Member facilitated the meetings by making appointments, and going with the producers to meet the director at the schools. A total of 8 producers executed formal seller agreements with the school system a significant amount was sold to the schools during the 2014-15 school year. We are not privy to the sales totals.
4. We are still learning the best practices for operating a co-operative sales venue for specialty crops. We will continue to operate the consignment booth at the farmers market in 2016 and beyond. When we see evidence that the amount of produce being grown for sale begins to exceed the demand at the farmers market, then we will hold meetings and promote a formal co-operative initiative among the producers.

Provided producer education for selecting, growing and marketing specialty crops. We will not receive final reports from scholarship recipients until around Nov. 1, 2015 and thus will not have a complete picture of the outcome of this portion of the grant. We have anecdotal evidence that some of the scholarship recipients have signed up with the Morgan County Schools to sell produce directly to them.

The management and operation of a consignment venue for the sale of specialty crops from new/very small producers has been a success. The number of participants in 2014 was 10. The number of participants in 2015 was 11, with mostly different people than in 2014. We believe this is possibly a pre-cursor to eventually running a brick-and-mortar store for cooperative produce sales.

Farm-to-School – supported the high tunnel construction at Warm Springs Middle School, which is a showpiece among the schools in our county for Farm-To School education.

BENEFICIARIES

Specialty Crop Producers: beginners in some cases and early stage growers in other cases. We now know how to provide good quality education. Reports from the producers are due in November, 2015. In 2014 we served 6 new specialty crop producers at the consignment booth. In 2015 the total served was 10.

Customers: more varieties of specialty crops now available to purchase at the farmers market. Almost every week the consignment booth sold out of specialty crops. Most weeks the consignment booth served 50 to 60 customers.

School children: learning to grow vegetables in a high tunnel, and getting to eat them, too. 150 children were introduced to growing vegetables in the high tunnel and they ate the produce, as well

Our Nine member of the board of directors has a more clear sense of direction now about where to put our efforts with producers going forward.

We estimate the economic value produced as a result of this project at around \$10,000, including the sales at the consignment booth and sales to the schools.

LESSONS LEARNED

We now have a much better picture of how to educate producers and a willingness to let the experts do it, since we have access to them at the regional farming conferences.

We will continue to operate a consignment booth at our farmers market. One of the big surprises in 2015 was a family of blueberry growers from Berkeley County, who we did not know at all. They came for one market day and sold over \$500 worth of blueberries at the consignment booth. They will most likely be back next season.

There is a lot of work to be done with the schools and the farm-to-school programs. To that end, MCAFF is the sponsor for an Americorps position focusing entirely on Farm-to School.

The board of directors of MCAFF is grateful for having had the experience of administering this Specialty Crop grant.

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PROJECT TITLE

“Mid-Ohio Valley Edibles” (MOVE) Locally Grown Educational Campaign Amount

Awarded: \$12,000.00

PROJECT SUMMARY

The “Mid-Ohio Valley Edibles” locally-grown education campaign was a way to nurture local producers of specialty crops who serve primarily local consumers. This project allowed producers and consumers to become more self-sufficient and less dependent on imported produce. This educational campaign was aimed at putting more local food dollars back into the communities of the Mid-Ohio Valley of West Virginia.

Significantly more money re-circulates in the West Virginia specialty crops industry when consumers choose to support local growers. Unlike their national competition, local growers regularly purchase from other local suppliers. Supporting local grown products here has been critical for the health and nutrition of the residents in the Mid-Ohio Valley region of West Virginia and beneficial to all citizens of West Virginia. This project used print, electronic media, and a spoken word campaign to highlight the benefits of consuming specialty crops, especially locally grown, helped consumers learn how to use the products in everyday cooking, and help consumers more easily identify local produce utilizing branding and logo identification.

The project did not build on a previously funded project with the SCBGP or SCBGP-FB.

PROJECT APPROACH & ACTIVITIES

The purpose of this project was to enhance the competitiveness of Mid-Ohio Valley locally-grown specialty crops. The problem that was addressed with this project was the need for increased consumption of locally grown fruits and vegetables. The campaign utilized a wide variety of delivery tools from yard and school signage to newspaper ads to recipe cards to chef demonstrations at farmers market.

The Center for Disease Control reported 79% of West Virginians consume less than 5 fruits and vegetables daily. WV Healthy People 2015 objectives include “Objective 19.2. Increase to 35% the proportion of people aged 18 and older who consume at least five servings of vegetables and fruits per day.” and “Objective 19.7. Increase the proportion of adolescents who consume at least five servings of fruits and vegetables per day by 5% from 20.4%”. Further, low-income persons are even less likely than middle and high-income individuals to consume fruits and vegetables due to cost and availability considerations.

The five counties core counties in West Virginia targeted in this project included Calhoun, Clay, Ritchie, Roane, Wirt and Wood Counties, all of which have a large percentage of low-income residents and persons in need of more fruits and vegetables in their diets.

The “Mid-Ohio Valley Edibles” locally grown educational campaign was developed as a way to educate local consumers on the importance of consuming locally-grown produce and encourage local farmers to grow more fruits and vegetables by developing a growers’ association and/or cooperative.

Baseline data collected from surveying nine local farmers market in the Mid-Ohio Valley region of West Virginia, which represents over 300 vendors, revealed sales of \$73,000 for the 2011 season. The MOVE Local First Educational Campaign began by organizing the regional growers into a growers’ association cooperative that could sell

products to the schools and other institutions. Partnering agencies held a number of organizational meetings in the fall and winter of 2012-2013 and finally established the growers association in February of 2013. The growers association became the advisory board for the grant activities. To help with brand recognition, some print advertising and marketing software (Local Food Marketplace) for regional specialty crops was purchased in May 2013. The print ads continued throughout the grant period as did the utilization of the marketing software for specialty crop growers posting product for sale.

Transportation lugs and coolers for aggregation points for local produce to local institutional customer deliveries were also purchased. Three educational series over the grant period, to promote local growing and selling of specialty crops in our region, were developed with four two-hour courses in marketing, pricing, production planning and produce preparation, and post-harvest handling and storage in each. The MOVE brand was promoted in regional and state publications. Eat Local banners were developed and hung at each of the area farmers markets. "Eat local" posters and flyers about buying MOVE produce were distributed at restaurants, stores, and schools in each of the counties. Five thousand recipe cards for local produce available were developed and distributed at local businesses, farmers markets, Cooperative Extension offices, local libraries, hospitals, farm stores, produce stands, and greenhouses.

Schools and institutions in five of the six counties were recruited to purchase local produce. School cafeterias in the region now have local foods 'wipe-away' display boards. Nine cooking demonstrations were held in each of the counties throughout our region at schools, farmers markets and other public venues. "Eat Local" bumper stickers and yard signs were distributed to the MOVE cooperative customers and supporters in the spring of 2014. An unplanned measurable outcome was the development of a Facebook page for MOVE to provide more visibility for local grown produce and growers. Which has become a forum to share events, training, and recipes for growers and consumers alike.

Meat and egg producers have paid additional advertising costs and membership fees to ensure that project funds were used solely to enhance the competitiveness of specialty crops. The preliminary survey data at the beginning of the grant period was collected and shared by the project partners in WVU Extension at regional meetings and the 2013 WV Small Farm Conference. The Mid-Ohio Growers Association hired a business analyst, Karen Wayne, to survey growers to determine perceived benefits and consumer behavior changes in partnership with the WV Value Chain Cluster Initiative at the end of the grant period to assist the project partners in collecting needed information for the grant and "Local First" campaign in 2014. The business analysis determined that local producers were more confident in their production and marketing practices as a result of the educational efforts from the "MOVE" campaign, specifically as a result of their three educational series offered throughout the grant period for growers in the areas of marketing, pricing, production planning, produce preparation, and post-harvest handling and storage. The growers benefitted by reportedly increasing their sales from the initial \$73,000 in the 2011 season to an approximate \$219,000 in the 2014 season (tripling sales in the region). There was a 19% increase in growers that participated in marketing/selling products through a cooperative effort. Additional grower benefits reported included lower marketing and transportation costs. Consumer behavior changes were much hard to summarize. Reports of consumer behavior

changes were noted in more informed consumer questions received by direct marketers at the regional farmers markets. An example of the questions included growing practices utilized, region-specific harvest questions, and post-harvest handling/storage recommendations. Surveying including an evaluation of recognition of the 'Mid-Ohio Valley Edibles' brand. Respondents from the region (consumers/growers) reported recognizing the brand as a regional produce label and seeing it in print ads and on farmers market signs, yard signs, bumper stickers, in schools and some by the marketing website visits. One survey responded commented that the brand & MOVE marketing materials reminded them to eat local produce first above higher price organic products that may have travelled farther.

The significant contributions and role of project partners for the grant are as follows:

- Brandy Brabham, WVU-Roane Co. Extension Agent organized the growers meetings within the region with assistance from the area's County Extension Agents for each respectively county in partnership with Megan Kahoa with the Mid-Ohio Valley Health Department. WVU Extension Specialists along with experienced grower, Bob Gregory provided the educational series workshops for the growers. She also assisted Alex Straight, WVU-Ritchie Co. Extension Agent in developing the survey for growers and consumers to collect the baseline data used for the project. Brabham additionally completed all annual and final reports required for the grant.
- Travis Cullen, WVU-Wirt Co. Extension Agent ordered and distributed the "Buy Local" banners for each for the nine regional farmers markets. He also worked with an AmeriCorps Volunteer, Lisa Minney is developing the PSAs about buying local and the print articles and advertisements.
- Cathy Flashman, Spencer Farmers Market Manager agreed to serve as the newly formed growers association's president and helped to develop and print promotional materials such as yard signs, bumper stickers, t-shirts, and other promotional materials.
- Nancy Bremar, Nutrition Outreach Instructor for the Family Nutrition Program provided the cooking demonstrations with assistance from AmeriCorps Volunteer, Lisa Minney.
- Regional Farmers Market Managers, Librarians, and WVU Extension Offices helped to distribute consumer information to general public in the region.
- AmeriCorps Volunteer, Lisa Minney developed and distributed recipe cards and Local First Signs to regional schools and public outlets.
- Karen Wayne, Business Analyst with the WV Value Chain Cluster Initiative collected and summarized the follow-up grower and consumer survey information.

GOALS AND OUTCOMES ACHIEVED

The grant project established a regional growers association that supports local foods and regional specialty crops growers throughout the Mid-Ohio Valley region of West Virginia. Marketing software acquired for the growers association allowed local specialty crops to be promoted on-line and throughout the region using print and on-line advertising. Consumer awareness of specialty crop growers increased through the distribution of "eat local" print advertisements in newspapers, bumper stickers, yard signs, school signs, recipe cards, school posters, flyers, and banners. Local specialty crop growers were able to utilize aggregation totes and coolers for local customers to minimize marketing costs and deliver more produce to local markets. Local stores and restaurants who purchased local produce utilized promotional posters

created through this project to remind customers that local produce was included on their menus or in their inventories. Nine farmers market utilized banners to promote the MOVE “eat local” educational campaign along with the cooking demonstrations and recipe card distribution.

The long-term goal of increasing the consumption of fruits and vegetables for the consumers in our region has been favorably impacted according to data collected from focus group studies through the area. This goal will be further evaluated by the health department through a regional survey of clientele over the next year.

The growers benefitted by reportedly increasing their sales (**goal**) from the initial \$73,000 (**baseline data collected**) in the 2011 season to an approximate \$219,000 (**benchmark**) in the 2014 season (tripling sales in the region). There was a 19% increase (**target was 25% increase**) in growers that participated in marketing/selling products through a cooperative effort.

BENEFICIARIES

The specialty crop growers that benefitted from this project include twenty small market gardeners and three to four commercial fruit and vegetable growers directly involved in the MOVE growers association through increases in production, lower marketing costs, and more sales generated. Ninety farmers’ market vendors throughout the region have benefitted from the “eat local” educational campaign through increases in sales and consumer awareness of the benefits of locally grown produce. Four county-wide school districts have benefitted from this campaign through local farmer connections with the schools, serving local produces to students and staff, and basic awareness of how to make their food dollars go further.

LESSONS LEARNED

Some goals and outcome measures were not fully achieved due to the scope of an awareness campaign’s impact on consumption. When able to modify project to focus more on supporting the specialty crop growers with specific equipment like marketing software, harvest/delivery lugs, and coolers, marketing barriers diminished and more growers expanded sales to local consumers. Education was also important to the success of this project, in that, producers learned how to make institution sales and institution learned how to connect with local farmers to get local produce and consumers learned the benefits of buying and using local produce in shelf-life and cooking.

CONTACT PERSON

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ADDITIONAL INFORMATION

Picture 1: Former MOVE coordinator, Terri Toothman with a display of recipe cards, signs, and an educational display created with grant project funds and utilized to enhance the project.



Picture 2: Lugs for delivery of fresh local produce.



PROJECT TITLE

**Southern WV Small Fruit/Tree Workshop Series and Demonstration Project Amount
Awarded: \$15,000.00**

PROJECT SUMMARY

This project focused on education of West Virginia farmers/growers on the production of small fruits and fruit trees, both on a small and large scale. In addition to the education perspective, two demonstration sites have been developed for continued educational opportunities focusing on hands-on pruning and maintenance, insect and disease management and general orchard management, among other topics. Over the course of this project, 150 participants attended workshops in the two locations in which demonstration sites will be located, while an additional 25 participants attended individual workshops on Bramble production in other locations around Southern West Virginia. The motivation behind this project, was the success of a similar project in the more Central counties of West Virginia. During these previous project over 300 participants attended workshops and that number indicated a huge demand for education and an interest in learning about these crops for both home use and commercial sales. With the current demand for local foods, this project began at the perfect time. All groups involved in the local foods movement (i.e. growers and consumers) are interested in utilizing small fruits, so it is imperative that the supply of locally grown small fruits increases to meet the increased demand.

This project built off the success of a prior Specialty Crop Block Grant entitled *Small Fruit/Tree Workshop Series and Demonstration Project* funded in 2009. The previous project elicited over 300 participants in only five workshops. This amount of interest certainly indicated that West Virginians were extremely interested in small fruit production as both a hobby and also from a commercial perspective. Many of these workshop participants implemented some or all of the fruits discussed immediately after these workshops took place and in the years following have been able to sell at local farmers markets and have had award winning fruit being produced. The project being focused on in this final report “piggy-backed” on the success of the previous project to replicate the workshops and demonstration sites in the more southern counties of the state. With demonstration sites and workshops in McDowell and Greenbrier counties we were able to expand the educational reach of WVSU Extension Service into additional counties, as well as educate participants interested in growing small fruits for the local market in these areas.

PROJECT APPROACH

During the time period of the project, the activities performed included the delivery of 11 different educational workshops in Southern West Virginia, as well as the planting of demonstration sites in McDowell County and Greenbrier County. As part of the educational workshops, a total of 175 participants attended and 92% of these participants indicated that they increased their knowledge of small fruit production. In addition to the increase in knowledge, many of the participants indicated that they are already, or will consider, growing small fruits in the future. As part of the demonstration sites, WVSU Extension Service is trialing alternative growing methods, such as outdoor containers in areas where soil conditions are poor, and also trialing new varieties of plants such as Prime Ark Freedom Blackberries, which

are a fall-bearing primocane style blackberry. As these demonstration areas begin to get into full yield production, the data collected will be reported on to the WV Department of Agriculture.

Project Partners were invaluable to the overall success of the project. Project partners included Five Loaves and Two Fishes Food Bank in McDowell County and Fruits of Labor, Inc. in Greenbrier County. At both of these locations, we were able to work together to develop a plan for the implementation of the demonstration sites. In McDowell County, it was determined that above ground growing would be the most successful method of production, so this demonstration site is comprised of containers and raised beds, as well as a demonstration of hydroponic strawberries. In Greenbrier County, this demonstration project is a traditional in-ground site, but is planted at a fairly high altitude in comparison to other locations WVSU Extension Service has worked with in the past. This site will give some insight as to whether or not higher altitude locations will be damaged by frost more so than other locations. Each of these locations also helped to host a 5-part workshop series over the course of two days. These workshops were very well attended due to the assistance with advertising in the local area, as well as being a community hub in each of their individual communities.

GOALS AND OUTCOMES ACHIEVED

The goals listed below were proposed for this project. Goals 2 and 3 were a bit longer-term goals, and it has yet to be determined if the participants have taken the next steps into implementation and marketable production. Beginning in the Spring of 2016, many of the participants should be moving in that direction if they are considering small fruit production. With that said, based upon the evaluations completed by participants it is very likely that these goals will be met with relative ease. Goal 1 came up just a bit short of being accomplished. While the target was 300 participants, we came in with a total of 175. This could be in large part to many different reasons, but one of the most noticeable is that the workshops were delivered in lower population areas like Kimball, WV and Rainelle, WV. Additionally, the Rainelle workshops were delivered in January creating potential for travel issues due to weather.

Goals:

1. At least 300 people will participate in the individual workshops over the course of the 3 workshop series.
2. At least 30 of these new West Virginia small fruit and tree fruit growers will develop skills and knowledge to implement a small fruit production scenario at their farm or in their own backyard
3. At least 15 of these new West Virginia small fruit and tree fruit producers will further their crop production into a marketable portion of their business.

BENEFICIARIES

The beneficiaries of the project are many, but the largest beneficiaries include the participants of the educational workshops and also the two locations in which there are demonstration sites. For the 175 workshop participants, this project allowed them to better

understand the processes behind growing their own small fruits. It is anticipated that many of these people will add small fruits into their agricultural enterprise, or expand their current operation into a commercial sized enterprise. For the demonstration site beneficiaries, this project is of vast importance as well. At the Five Loaves Two Fishes Food Bank, the fruits grown in the demonstration will be used in cooking demonstrations, as well as given to food bank clientele to add healthy foods into their diet. At Fruits of Labor, the fruits grown will go directly into a restaurant/bakery setting to be served to the people of Rainelle, while also being a hands-on education area going forward. This site will also serve as education for Greenbrier County Drug Court participants who are working with Fruits of Labor, so they can better understand where this food comes from and the work that goes into growing it. All told, this project would have a huge economic impact just from the demonstration sites alone (should they be going into the local market), but the impact from this project will be seen going forward as workshop participants scale up their operations and get locally grown small fruits into the local market place.

LESSONS LEARNED

This project offered many lessons, but these lessons were predominantly positive. One example of these lessons include finding and working with great program partners. This project would have been a disaster without finding these program partners. Unfortunately, we didn't meet one of these partners until the second year of the project and some unforeseen circumstances did not allow for overlap until the third year of the project. This but a bit of a rush on things so some of the planning and implementation, especially on the side of the demonstration sites, suffered a bit. Another lesson that was learned as part of this project was the difficulty in, not only, finding students interested in working on these projects but also getting them hired. As a result we decided in the final year of the project to forego this portion of the original budget and moved this budgeted money into supplies to do a larger demonstration site in Greenbrier County.

When it comes to goals not being reached, the lessons learned were that perhaps Southern WV isn't quite as ready for agricultural education programs as some of the more traditionally agricultural counties are. This is not to say that these counties will never get there, because over the course of these past three years the change has been significant, but for the purposes of this project a goal of 300 participants may have been a bit of a reach by simply trying to compare what was seen in Cabell and surrounding counties. If this project would have been started a year later to be completed in 2016, it is likely that this 300 participant goal would have been reached or possibly even surpassed.

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ADDITIONAL INFORMATION



PROJECT TITLE

Farm to School Support Initiative Amount

Awarded: \$35,070.00

PROJECT SUMMARY

This project provides funding for four county (Fayette, Cabell, Putnam and Wayne) schools to provide farm to school programs and activities related to specialty crop product and school gardens. The statewide Farm to School Initiative was forming and taking shape at the beginning of this grant cycle and the four counties that participated were eager to take advantage of the opportunity that school-based production offered in terms of student engagement and the opportunities in curriculum enhancement that hands-on learning offered students in their respective region. Their goals, objectives and plans were all different and evolved over the course of the three year project to meet student learning needs, challenges and adaptations necessary to develop a Farm to School program within their geographic county. The approaches, problem solving and results provided an insight into the need for customized programming based on student needs, teacher input and interest as well as the support of the community. The advantages and learning environment presented by having a school garden experience available to students is evident through a variety of instructional and setting scenarios presented by the four programs included in this project.

In Fayette County, the project was designed to provide access to all students to the garden at New River Elementary, but especially aimed at providing access for special needs students who have limited mobility. The goal was to expose all students to a vibrant environment found in a garden. They implemented a comprehensive plan for the entire garden area at New River Elementary to include a gardening area for the exclusive use of the special needs students.

Putnam County, focused on the hope for Food Security in their county and state relied on getting our youth excited about agriculture and learning how to grow their own food. WV enjoys a heritage of small family farm, but with food policies established in the 60s, three or four generations of small-scale farmers and role models youth have been lost. The grant for this county focused on public school students as a "special crop". Putnam County's future horticulturalists, organic vegetable producers, county nutritionists or gourmet chefs may have been among the project participants. After a meeting in the spring of 2012 (17 teachers from six county schools), interest in using Garden Based Learning (GBL) initiatives students was established. The principal and five teachers from George Washington Elementary in Eleanor attended and expressed clear interest in the GBL initiatives. The SCBGP grant was the result of that meeting focusing on incorporating garden-based learning initiatives into the Putnam County school system. In the fall of 2012, Buffalo HS re-instated an Agricultural Education curriculum and FFA program after the Putnam County Board of Education discontinued them in several county high schools in the 60's. The success of our agricultural education initiative at Buffalo HS may be enhanced if

our elementary and middle school graduates gain an early interest in science, biological systems and agriculture. Therefore, the focus of Putnam County's program was to establish garden based learning as a true STEM program with measurable educational objectives through teacher cooperation and input from the community (Putname County Master Gardeners-PCMG).

In Cabell County, the Farm to School objectives centered around production of crops for the local food system. Although home to a large FFA program, crop failure, teacher reduction and wavering interest from the students stalled the project for the first two years. A modification in the program interest provided a flurry of activity for the project and the grant activities have provided motivation, results and promise of sustainable impact as the erection of a high tunnel at a motivated middle school in the county is providing troubled and special needs youth incentive and resources for an alternative learning environment. Food grown in the high tunnel will be used for the Farm to Table program. Huntington East Middle School is a Title 1 school which means a large majority of the students are eligible for free or reduced breakfast and lunch and a lot of them have very poor eating habits. It is the hope of the school that the students will take a great ownership in what they grow and change their unhealthy eating habits to healthier choices.

Wayne County involvement in the Farm To School Initiative has been limited by lack of an FFA instructor. With help from the local Farm Bureau, the building of a high tunnel has provided an important resource to a vulnerable and high needs school and community. The Tolsia High School high tunnel provides an alternative growing and learning environment for a new teacher eager to use specialty crops as a curriculum focus in an environment not conducive to growing.

The interest, variety of approaches and target student audiences from these three projects explores the variety of ways Farm to School can be initiated and grown in West Virginia schools. These pilot programs have paved the way for Farm to School activities now found in more than 5 WV counties.

The initial Cabell County program was the only county school program that had an existing Farm to School Initiative (state) prior to the start of this project. The SCBGP funding, however, was the first funding received through a USDA program so no previous programming or work was used for this initiative.

PROJECT APPROACH

A variety of approaches aimed at incorporating garden based education was employed by each of the four participating counties.

In Fayette County, an indoor grow/demonstration garden in the cafeteria as well as a production garden was built at New River Elementary School. Grow lights were provided in 12 classrooms to grow starter plants that were placed in the outdoor production garden. Nutrition and wellness classes were provided. Students were able to follow the entire process of plants from seedlings to decay and breakdown.

A donation of a greenhouse at New River Elementary provided a third growing environment for the students to incorporate into their learning process and has become the focal point of the programs at the Elementary School, adjacent High School and Vocational Center as well as displaced special education students from the Middle School who are now housed at the high school. The production garden has been renovated as an ornamental

courtyard has become a “kitchen garden” with produce and herbs with maintenance undertaken by several of the special education classes throughout the complex. A straw bale garden for wheel chair accessibility was established and maintained. Available for traditional and special needs students, the Farm To School Initiative at this school focuses on the occupational needs of students at the four educational programs at the complex.

Putnam County purchased a 24’ x 48’ high tunnel for the 265 student George Washington Elementary School and gave each class a planting area. Utilizing area businesses and community support (Putnam County Master Gardeners-PCMG), students were provided planting opportunities that consistently coincided with learning outcomes in STEM-based curriculum.

The county chose to tie the school garden program directly to science and math based scores from standardized testing to determine solid academic results. All age groups were involved in measuring soil moisture, temperature monitoring as well as crop selection and growing techniques. Training, development of a food safety plan and presentations to the communities in the form of an Open House provided students an “whole curriculum, project based learning” environment. An additional three schools (800+ students) within the county are now adopting this project within their schools for a county-wide adoption of Farm to School. In addition to program expansion, the project has also led to research and the development of learning materials relevant to food safety and best practices in school garden curriculum delivery that has been shared with state, regional and national audiences.

With personnel, program and weather challenges encountered by the original project recipient (Cabell County FFA), equipment initially purchased for production as well as funds were reinvested into a high tunnel at East Huntington Middle School. Initiated by teachers, Food Service Director Rhonda McCoy “rallied” the troops to develop, build and begin a school based garden learning program in a very short time. Students were called upon to assist the construction crew, calculate resource needs (typar, gravel and raised beds) and maintain the new beds for immediate production (garlic, onions and greens were harvested 45 days after the tunnel was erected in mid to late September). A group of interested teachers were identified and began to meet weekly about the tunnel and its use in the curriculum and has already been used for alternative settings and activities for challenged students needing an outlet with a learning emphasis. Development of teacher training materials and curriculum integration have been added to the project goals to insure sustainability of the tunnel investment.

In Wayne County, the Farm To School project has provided a resource and recruiting tool to reinvest in agriculture in the county. Recruitment of an FFA advisor after the grant start proved to be problematic after addressing land use issues and location. The high tunnel for the project was placed at Tolsia High School and completed in July of 2015 through efforts of the local Farm Bureau. In August of 2015, the school was able to recruit a new FFA advisor (former Extension agent) with a strong interest in and expertise in high tunnel crop production. For this county, the grant was able to provide a learning environment for the future with a teacher able to incorporate specialty crops into the vocational agriculture curriculum.

All county activities focused only on specialty crop production as demonstrated by focuses on alternative plant growing mediums---high tunnels, grow towers, vegetable production and eligible plant based curriculums (Junior Master Gardeners).

GOALS AND OUTCOMES ACHIEVED

For Fayette County, successful incorporation into the school curriculum of the garden project was a significant milestone. Utilization of the resources as part of daily activities (i.e. tower garden in the cafeteria) provided students a direct linkage between their school day and the project activities. A baseline capture of crop knowledge (visual identification) for the moderate and mild special education students noted a large discrepancy between identification of common specialty crops (i.e. corn, peas, tomatoes, potatoes). Students in the moderate class were only able to identify crops with 50% or less accuracy and unable to correlate specialty crops with value added products (i.e. popcorn, pizza sauce). The tools and resources provided in this activity increased visual recognition by 25% and students were encouraged to try a variety of specialty crops (including Ed who swore he “would never eat vegetables” who was amazed that he was during the air popcorn activity as part of a lifestyle lesson!). There was no noticeable different in pre and post identification in the mild class as they were able to recognize crops at 90% or above pre and post. Again, recognition of value added products and their source specialty crop were explored during the grant activities and the kitchen garden development. In addition to the work and data provided by the special education component, the education complex consisting of the High School, Elementary School, displaced Middle School, and Technical School have coordinated their Farm to School efforts, incorporated the ProStart program (post-harvest processing) and begun to coordinate resources and student learning environments.

Putnam County Schools have been able to identify their outcomes by program year as the grant efforts have created the foundation for additional programs and resources that find their roots in the development of the farm based curriculum created by the SCBGP. They have summarized their results as follows:

A. 2013 GW school garden, inaugural year

The project manager (Talbot) noted that he had never grown a garden that produced as well as the GW GBL project. This enjoyment was even more compounded when the students presented, weighed and documented their harvests. Based on a teacher evaluation (11 respondents) after the spring harvest, teachers improved in their own gardening skills by 20% (from a “never gardened/novice score” of 1.91 to a “novice/intermediate” level with a score of 2.73). Teachers indicated that the student interest in gardening approached a score of 5, excellent interest (4.64). When asked if the teachers were able to incorporate GBL into their math, science and literature curriculum, their response was somewhat to a lot (3.64). From the teachers response of 4.2 (a lot to excellent impression), it is apparent that the GBL project made a favorable impression/impact with the students’ parents. Considering the effort that the teachers put into the GBL project, they considered that the time was well spent (4.2 score between a good use of time and an excellent use of time). Students (n=260) likewise conveyed improvement over their GBL comprehension from the baseline data taken earlier. With the teachers scoring the student responses, a 40% improvement in knowledge gained (grades 1-2 was observed for “What do plants need to grow?” Eighty percent of the students (grades 2-5) understood the meaning or concept of our five vocabulary words: germination, ventilation, tendrils, cool season plants and correct soil moisture.

The teachers that added their own comments wrote that: 1) Students were excited about all aspects of the high tunnel, 2) The students learned so much and were very proud of what they grew, 3) The students were always excited and eager from pre-planting stages to harvesting, 4) They enjoyed gardening and were very excited and most importantly learned so much, 5) They enjoyed planting and harvesting and weighing, and 6) My students wanted to come to the garden every day!

At the “open house” in May, 2013, a presentation entitled “George Washington Elementary High Tunnel Gardening Project” was given which was subsequently presented to Principal Myers and other teachers around the county and statewide. Sixty-five teachers from around the State gathered at the Regional School Gardening Symposium on October 28, 2013 in Charleston where Ms. Myers and teachers from GW Elementary gave the presentation about our GBL project. Ms. Myers also gave another presentation to the principals and teachers of Putnam County elementary schools. The success of the GW garden-based learning project was contagious. Three other Putnam County elementary schools wanted to include GBL into their curriculum and asked GW for help. <Note: Copies of the presentation are available in a .pdf format but not on the web>

B. 2014 School Garden Evaluation and Expansion: ready or not!

On January 9th, 2014 10,000 gallons of MCHM chemical leaked into the Elk River and disrupted the water supply to 300,000 residents and businesses downstream. This spill caused the schools in Putnam County to be closed and along with inclement weather, they were closed for three weeks in January and February. Water for the garden was trucked in until April. Consequently, delays in constructing the high tunnels were encountered and the school didn't start planting the spring crop until late March or early April, two months late. This disruption placed an extra burden on the MG volunteers. On top of it, all of the six volunteers became ill at one time or another from exposure to sick students. The high tunnel is typically 70 F in an enclosed, humid, high tunnel, a literal petri dish for bacteria.

Based on average teacher evaluations from our four schools (31 respondents) after the 2014 spring harvest, teachers improved in their own gardening skills by 14% (from a “never gardened/novice score” of 2.45 to a “novice/intermediate” level with a score of 2.80). Teachers indicated that the student interest in gardening indicated a score of 4.29, a lot of interest. When asked if the teachers were able to incorporate GBL into their math, science and literature curriculum, their response was somewhat to a lot (3.45). From the teacher's response of 3.45 it is apparent that the GBL project made a somewhat favorable impression/impact with the students' parents. Considering the effort that the teachers put into the GBL project, they considered that the time was well spent (3.99) in the garden. Despite productive gardens and excellent student interest, some of the teacher evaluations pointed out how short staffed the project was. At one of the new schools, teachers felt inadequate with managing the gardens, especially during harvest. The project requested and received funding through the WV Office of Child Nutrition to acquire an AmeriCorps Volunteer to assist us with the four school gardens. The volunteer assisted in planting and harvesting

with the students; while a grant to USDA F2S program to have a full-time coordinator to follow the harvest into the school kitchens and assist the cooks with produce preparation was received.

John Porter, Jessica Pollitt and Talbott presented the garden-based learning program/school garden project at the Annual Youth and Children Gardening Symposium (sponsored by the Horticultural Society) on July 7th-9th 2014 in Columbus OH. Attendance at two sessions on Food Safety in School Gardens sparked both interest and need and a \$4920 from a WVU Nutrition Extension grant to develop a School Garden Safety Checklist (appendix) adapted from Rick Sherman (Oregon Board of Education) was received and implemented. Favorable comments on the food safety checklist while meeting with the coordinators of the WVDA, FFA and the Child Nutrition Program. The Food Safety and Nutrition Resources were sent out to AmeriCorps volunteers working with F2S and all WVU Extension Agents (see link to drop box below)

Food Safety and Nutrition Link:

https://www.dropbox.com/sh/h6f2lkahosist3k/AAD3irjgVDDL5wDO_VlrSzQGa?dl=0

Production Link: <https://www.dropbox.com/sh/oueqwd1j2pab9d6/AACo2PkeXTuxPTQ6fEYreU5xa?dl=0>

C. 2015 Focusing on Food Safety and Introducing the “Fifth Grade Pest Detectives”

Since the 1800’s, school gardens have been used to educate and excite students about our environment. Recently, there has been a renewed interest in teaching children how food is grown in hopes of introducing them to better nutritious choices and combating our nation’s current obesity crisis. While training students to grow produce for the cafeteria, it is equally important to teach them how to reduce the risks of food borne illnesses from their agricultural practices and harvesting techniques. Currently, there are no food safety guidelines or regulations in the WV F2S program that require farmers or students to document their production and harvesting practices.

There are sixty public schools throughout West Virginia that participate in the Farm to School Program (F2S). In 2013, students sold over \$44,000 of produce to their local Boards Of Education for serving in the school cafeterias. In Putnam County alone, students (1044) from four elementary schools and Buffalo FFA Chapter (45) plant and harvest cool season plants during the spring and fall semesters and use the receipts (\$1000+) to sustain their garden-based learning programs. The expansion of the F2S and garden-based learning programs in our WV schools will ultimately depend on whether students and teachers can provide safe produce to serve in the cafeteria. **All** students need training in safe food handling techniques as an important life skill.

Besides learning how to manage the day-to-day activities in the HT (temperature control, ventilation and watering), students also learned to identify evidence of pests (insects and weeds), thin plants, and identify stages of plant growth. They learned about soils, composting, proper harvesting techniques, data recording, gross, tare, and net harvest weights, and life cycles of plants. They learned about grids, area and perimeter, and many new vocabulary words (condensation, germination, moisture, humidity, etc. Teachers used the HT for a variety of learning activities including math, science, art, and even physical education. The gardens

turned out to be very productive and yielded over 100s of pounds of vegetables that were served in the school cafeterias. For the spring harvest alone, over \$1000 was paid back to the schools through the Farm to School Program. The Putnam County Board of Education (PCBOE) endorses the USDA Farm to School Program through the Nutrition Director's office. Revenue is used to sustain the garden projects.

Tim Sayre joined the Putnam Co. office staff as a WVU Extension Families and Health Agent one month before the 2014 spring harvest. Tim introduced food safety concepts and good handling practices to the students at harvest and showed them how to harvest safely the produce for the kitchen staff. Currently, there are no food safety guidelines or regulations in the WV F2S program that require farmers or students to document their production and harvesting practices. While training students to grow produce for the cafeteria, it is equally important to teach them how to reduce the risks of food borne illnesses from their agricultural practices and harvesting techniques.

The garden-based learning project with the Putnam County Schools was recognized at the 2014 Annual WV Master Gardener Conference by the WV State MG Association. For his work with our school gardens, Robert Carter (Putnam County Master Gardener) was awarded the 2014 WV MG of the Year Award; the Putnam Co. MG Association won the 2014 WV MG Project of the Year Award for "Hands-on Project with Youth". Tim Sayre and Talbott were invited to present our GBL work at the "100th Anniversary of the Smith-Lever Act Conference on September 23, 2014. Based on documentation provided by Talbott, more than 2,691 hours of paid and volunteer time have been devoted to the project and students in Putnam County.

Based on the increased scores in overall math and science, the project met outcome #5 related to the State Assessment criteria. Specific contribution by the SCBGP are not easy to quantify. Subjective feedback by the teachers, school garden curriculum integration into the general educational programming, and student engagement point to a contribution by the project into increased STEM scores and aptitudes.

In Cabell County, the outcomes have been for a shorter duration but built for future growth and sustainability of garden based learning in the school that adopted the Farm to School concept as a valuable learning tool. The construction of the high tunnel, involvement by teachers and students as well as the Food Service Directors commitment to having student grown food as a staple in the cafeteria will mean that the resources purchased by the grant will provide a learning and growing environment for students. This commitment was evidenced by a rapid build followed by an immediate harvest (45 days; mid-October). Scheduling for a January 2015 Junior Master Gardeners teacher training as well as training at the 2016 Small Farm Conference are already in place.

With the projects initial emphasis in Cabell County, the FFA program had an engaged teacher who intended to complete the SCBGP activities specific to potato production. An initial plot was planted designed to meet outcome #1 with 1,000 lbs of potatoes produced. This crop failed and the FFA instructor left the program. Difficulties in the hiring of a new instructor and the adoption of the SCBGP project meant that this activity was modified with a modification. A new project, utilizing the supplies obtained in the potato activity meant the building of a high tunnel and a school garden project at the Middle School. Junior Master Gardener training and adoption of technical assistance and food safety programming conducted by the Putnam County project as well as the formation of a teacher/student planning team (meeting weekly)

were quickly implemented. As a result of this modification, outcome #1 was not met but the new tunnel is already contributing to the school cafeteria offerings. Outcome #2 with 60 FFA students participating was not accomplished but more than 75 students at the Middle School are engaged in high tunnel activities and outcome #2 at this level is not being accomplished by the GHP/GAP training but the adoption of the Putnam County safety protocols demonstrates a commitment to food safety and alignment with GHP/GAP principles.

Nutrikids reports (outcome #6) and the specialty crop consumption levels have been provided by the Cabell County Food Service Director to local growers to assist with production planning. One student in particular, a former FFA student who participated in the initial potato planting, is growing exclusively for the county school system and maintains constant communication concerning specialty crop needs. He delivers multiple times during the weekday and is one of the top two farmer growers for the statewide Farm to School program based on data collected by the WV Department of Education Office of Child Nutrition. Students at the Middle School will also be provide this data for analysis and curriculum integration (science and math) as future growing cycles in the high tunnel are established. As a result of the Middle School high tunnel success, the county school board has invested in 3 additional high tunnels/sites for the 2016-2017 school year building on the model established by this project.

The Fayette County project was the focus of outcome #4. A visual flash card of specialty crops (vegetables; corn, tomatoes, carrots, etc.) were presented to a group of 11 students in three different special education classrooms at New River Elementary. The autism students were not able to indicate respond to the flashcards while students in the higher functioning special education room scored an average of 98+% so their pre-test results did not allow for room to obtain mastery levels. The lower level special education students were able to respond either verbally or through hand signals and their pre-test analysis of 45% mastery was used as the baseline level. After in-class experiential opportunities (planting, watering, Grow Tower utilization, computer flashcard series, and tastings), a second year (Fall 2015) specialty crop card review showed an increased mastery at 90% for recognition after participating with Farm to School activities (11 students initially; eight students). Post-test mastery was also obtained through verbal and non-verbal clues.

BENEFICIARIES

In Fayette County students who participated in the program benefited, with an emphasis on the special needs students at Oak Hill High School, Collins Middle School and New River Elementary School as well as the Technical Center. Future coordination and resource sharing mean that the Farm to School project will continue to impact at least 950 students including 35 vocational and technical enrollees (agriculture and ProStart) who can utilize their Farm To School skills in career exploration and adoption.

In Putnam County, the beneficiaries of the GBL project were the students and the community. Students at GW Elementary improved their Math and Science West Test scores (13% and 19% respectively) over the previous year's scores, representing the most improvement in Putnam County elementary schools for 2013.

Students of Huntington East Middle School (750) are the direct beneficiaries of the grant through their new school high tunnel and the learning opportunities offered by curriculum integration. Consumption of fresh vegetables, adoption of healthy eating options and the

development of sustainable life skills are all tangible benefits for the students.

For Wayne County, the beneficiaries can be quantified by the 401 students who received the benefit of a high tunnel and curriculum integration of the Farm To School program. This includes future food that can be grown for consumption as well the integration of STEM concepts in both the agricultural and academic curriculums.

Statewide, these projects have demonstrated the diversity of projects and levels of involvement that developing and implementing a Farm To School program can have on students. The program has continued to flourish based on the successes, program development and models that these projects have provided.

LESSONS LEARNED

Although the project generated a diverse number of outcomes and successes, there were many lessons learned. The SCBGP was able to fund these four counties as pilot projects so many of the challenges encountered have been used to avoid mistakes in subsequent statewide initiatives. Each of the counties identified one or more challenges that they were able to overcome to make a success Farm To School program impact.

For Fayette County Schools, core curriculum changes and how to fit Farm To School activities within the framework of required curriculum have been a challenge. Low enrollments, teacher shortages, and turnover have also impacted the leadership of the program. With the relocation of the Food Service Director/Farm To School coordinator in the county (November 2015), this program will continue to be challenged. Deteriorating infrastructure issues throughout the county have strained resources and displaced students. Sustainability of this program will rest with the hiring of a new Food Service Director who makes Farm To School a priority for the education complex.

Despite their overall success, Putnam County's project faced adversity. They listed volunteer burn out, food safety issues and the displacement of two gardens. The volunteer burn out issue was resolved through identification, role assignment and teacher training that allowed the PMG group to place more of an advisor role in the curriculum delivery. With proper training, teachers were able to take the leadership role with their students rather than "sit-back" and let the volunteers supervise their classroom time in the garden. The closing down of two gardens (high levels of arsenic in one and a feral cat invasion in another), precipitated the development and delivery of the food safety module that is essential in any school garden environment particularly those that are growing food for human consumption.

Cabell County School learned that when motivated (by losing grant funds), dedicated educators can come together to accomplish the building of a learning environment for their children in a very short period of time. This school has set the wheels in motion through cooperation to get the project up and running while listening to others (mainly the adjacent Putnam County group) to identify teacher training and student learning needs to format their garden based project.

For Wayne County Schools, the project challenges have centered around the lack of an instructor to coordinate Farm To School activities and utilize the high tunnel resource. The local Farm Bureau has attempted to hold the project together despite a missing piece and were rewarded in the fall of 2015 with a local extension agent accepting the teaching position.

Full utilization of the high tunnel as well as a teacher well versed in curriculum integration with support from the local community are the key ingredients now in place to help Wayne County expand and develop their Farm To School program.

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ADDITIONAL INFORMATION

PUTNAM COUNTY SCHOOLS

<http://www.metroputnam.com/article/20150601/ARTICLE/150609950#sthash.4D80lr6O.dpuf>



Master Gardener Bill Walker helps students, from left, Adison Mitchell, Emma Luikart, Britney Rollins, Lilly Wyant and Braxton Painter water flowers they planted outside the school's high tunnel garden.



Metro photos by BEN CALWELL Putnam County Master Gardeners Bill and Kathy Walker help Confidence Elementary School students, from left, Emma Luikart, Britney Rollins, Taylor Myers and Whitney Good weigh vegetables the students grew in their high tunnel garden. The produce, including lettuce, goes to the school's salad bar for the students to enjoy at lunch.



A cabbage plant growing in the high tunnel garden. The students and adult volunteers, including Master Gardeners, had to redo the raised beds when they realized they were made with pressure-treated lumber that might have made the plants unsafe to eat.



Fresh lettuce and onions grown in Confidence Elementary School's high tunnel garden provide a tasty addition to the school's salad bar.



Confidence Elementary students maintain a food safety log book pertaining to their high tunnel garden. Checklists include having clean hands and not wearing sandals in the garden.



Confidence Elementary students visit the salad bar during a recent lunch hour. The salad bar includes vegetables grown in the school's high tunnel garden.



West Teays Elementary School students Jada Scarberry and Kaden Polen examine plants for bugs.



Putnam County Master Gardener Dawn Long and Putnam County West Virginia University Extension Service Agent Chuck Talbott help students weigh vegetables.



Master Gardener Gene Duncan, a retired physician, explains pollinator plants to students outside the school's high tunnel garden. The students are planting a garden with plants that will attract bees, hummingbirds and other pollinators.



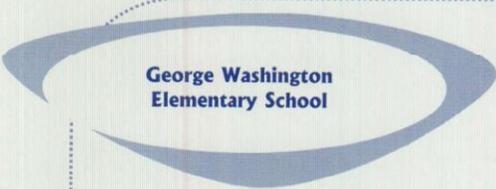
Duncan shows West Teays students Olivia Cook and Alexandra Anderson how to harvest cabbage plants in the school's high tunnel garden.

Presentations and Dissemination:

1. "Putnam County Schools Use School Gardens as Perennial Educational Tool". Chuck Talbott and Tim Sayre. To be presented for the 100th Anniversary of the Smith-Lever Act at the Waterfront Conference Center, Morgantown WV on September 23, 2014.
2. "Paving the Way for School Gardens in WV: Our Story" J. Porter, C. Talbott and J. Pollitte.

Presented at the National Youth and Children Garden Symposium on July 18, 2014. Columbus OH.

3. "How to build a high tunnel greenhouse: grow fresh food year round". Chuck Talbott and Terry Hudson. Presented at the "Try This WV Conference" on June 7th. WV Wesleyan University.
4. "Get Kids Excited about Growing Food" Chuck Talbott, Mellisa Williams, Jessica Pollitte. Presented at the "Try This WV Conference" on June 8th. WV Wesleyan University
5. George Washington Elementary High Tunnel Project. Chuck Talbott. Poster session at WV MG Annual Conference. May 2-4, 2014.
6. "Putnam County School's High Tunnel Project". Chuck Talbott. WVCAA Spring Agent's Meeting. Cabell Co. 4-H Camp. May 14th, 2014.
7. "Garden-Based Learning for Putnam County Students". Western Conservation District Annual Meeting. Point Pleasant. March 13, 2014.
8. "How does your garden grow.....in a high tunnel, of course!" Chuck Talbott and John Porter. Extension Service Professional Development. Jackson's Mill. Weston , WV. March 12, 2014.
9. "George Washington Elementary High Tunnel Project". Chuck Talbott. Presented by Mary Beth Myers, Helen Durgan and Becca Marcantel at the "WV School Garden Symposium". Charleston, WV. , October 2013.
10. "George Washington Elementary High Tunnel Project". Chuck Talbott. Presented at the "GW Open House" May 13, 2013.
11. "School Gardens and Food Safety". AmeriCorps training. 1/22/15. 17 volunteers attended.
12. "School Gardens and Food Safety" Training for Putnam County teachers from George Washington, West Teays, Hometown and Confidence elementary schools. Two weeks in January 2015. 68 teachers attended.
13. "How to build a high tunnel greenhouse: grow fresh food year round". Chuck Talbott and Maria Wilson. Presented at the "Try This WV Conference" on June 5th. 2015. WV Wesleyan University. 32 in attendance.
14. "Get Kids Excited about Growing Food" Chuck Talbott, Mellisa Williams, Jessica Pollitte. Presented at the "Try This WV Conference" on June 6th 2015. WV Wesleyan University. 45 in attendance.



**George Washington
Elementary School**

P. O. Box 680
Eleanor, WV 25070
Phone: 304-586-2184
Fax: 304-586-4275

Mary Beth Myers, Principal

February 25, 2014

Dear Dr. Danilovich,

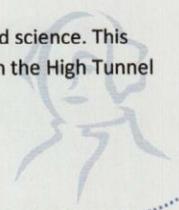
In the fall of 2012 several teachers and I attended a meeting to learn more about garden-based learning. The meeting was conducted by Chuck Talbott, WVU Agriculture Extension Agent and the Putnam County Master Gardeners Robert Carter, Kathy Walker and Myra Simmons. We were impressed and intrigued with the thought of teaching children the process of growing and harvesting our own food. However, we had no idea of the adventure we were about to sign up for.

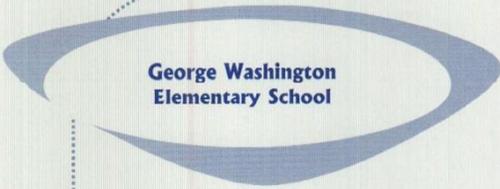
This is our second year with our High Tunnel. We have fourteen raised beds which means that each classroom from Pre-K to fifth grade to have their own bed with one community bed. It has been an amazing experience and I believe we will continue to discover lessons to incorporate in the High Tunnel. The impact of the Farm to Table program has been more than just learning how to grow our own food. It is truly an outdoor classroom where we incorporate many math and science skills through real life learning. We measure and weigh the food. The temperature must be checked daily and students follow guidelines for rolling up the sides if it is above 65 degrees. The fourth graders learned about area and perimeter from Master Gardener Robert. They used the raised beds for area and the High Tunnel for perimeter. This is a concept that has little meaning when it is taught using pencil and paper from a textbook. All of the fourth graders made a B or better on the test.

The parents are also noticing positive changes and results from their children. One common thread is that they are trying foods they have never eaten before. They are so proud of the fact that they grew it! Parents tell me that their children are now interested in gardening at home. As one parent put it, "He wants his own row in the family garden!"

I have also observed a boost in self-confidence for students who may not be very successful in some academic areas. They love learning in the high tunnel and the experience is one they remember. We had an Open House for parents and the community to showcase what we have learned in the High Tunnel. Students made presentations and told them what they had learned using words like germination, ventilation, cool season plants and correct soil moisture. The adults left saying that they learned a lot while they were here.

Another huge plus is that our Westest scores improved significantly in both math and science. This improvement was the evidence we needed to be completely confident that our time in the High Tunnel is important. It is another place to learn, not time out of the classroom.





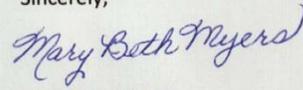
**George Washington
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Mary Beth Myers, Principal

I recommend this learning experience, without reservation, to all schools willing to learn in a new way through real life experiences in the High Tunnel.

Sincerely,



Mary Beth Myers

Principal, GWES



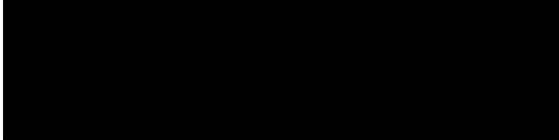
FAYETTE COUNTY SCHOOLS



Tug Chamberlain and his students in the Parks and Recreation Program donated their community project hours along with conquering the wind and the plastic on the greenhouse. Thanks everybody!!!

CABELL COUNTY SCHOOLS





PROJECT TITLE

West Virginia Department of Agriculture “Producer Education”

Amount Awarded: \$40,654.46

PROJECT SUMMARY

Specialty crop development and expansion in West Virginia is dependent on providing education and innovation to the farm community to encourage commercial production to impact the state’s resources (amount of specialty crops grown) as well as increased motivation (profitability) to the farming community. To do this, the curriculum development, delivery and resource follow up of production, marketing, food safety and value added processing must be made available to a state with diverse geography, limited access and adoption to broadband technologies and an aging farmer population that is resistance to innovation adoption. To fill this education need, this project focused on the development of instructors, program delivery and product development with a diverse slate of curriculums and required certification programs available throughout the state.

This project is similar to previous funding cycles in that it provides assistance and producer training opportunities. The differentiation from previous funding is that the participants are new. This project provides an opportunity for new, beginning and socially disadvantaged specialty crop producers and processors to attend training, gather technical assistance and expand the number of specialty crop farms and productions within West Virginia. Each training is specific to this round of SCBGP funding.

PROJECT APPROACH

Based on the SCBGP needs assessment survey developed in response to the WV SCBGP RFP and receipt of program applications, eight specialty crop specific programs were chosen for this project. They were Good Handling Practices/Good Agricultural Practices (GHP/GAP) training, Better Process Control School for value-added specialty crops (BPCS), MarketReady for market training and development (created by KY University-Dr. Tim Woods), technical support for a farm safety session specific to specialty crop agritourism operators, a food safety/specialty crop session during the newly implemented state-wide Annie’s Project risk management program, a Producer’s Series designed to facilitate specialty crop producer/buyer education and development (conducted by the WV Food & Farm Coalition and the creation of a “Writing Your Food Safety Plan” curriculum with delivery for GHP/GAP and FSMA compliance.

In order to accomplish each of these producer training opportunities, existing curriculum was evaluated, new state-specific materials were incorporated, teaching tools (i.e. PowerPoints, handouts, module development) were developed, marketing materials were created and deployed, program evaluation and post-training review/assessment conducted. Programs delivered by others (i.e. GHP/GAP training) were evaluated and the contracted instructors worked with the WV project staff to make the training relevant and meet the needs of WV participants. At each opportunity, participants were provided technical resources (i.e. Extension) to further their understanding and implementation of the training principles taught. New training tools such as FamilyFarmed food safety plan templates (Cloud based application) and new specialty crop insurance opportunities were incorporated where

appropriate.

For programs such as the MarketReady curriculum, adjustments to “West Virginia- ize” the curriculum as well as train-the-trainer resources/networks needed to be developed. Other programs (i.e. GHP/GAP training and BPCS) were contracted learning modules to provide credentials or certifications for specialty crop growers and processors. Throughout the entire project and within each training, the goal was to provide information, resources and skills that would develop new growers/producers and/or introduce new specialty crop products into the marketplace.

GOALS AND OUTCOMES ACHIEVED

Development of new specialty crop producer, growers, processors and products as well as buyer/seller relationship opportunities determined the effectiveness of these programs. A review of the programs and their participation provides opportunities to make this development possible. Participants are summarized in the following table:

Educational Program	Number of Session	Total Participants
Annie’s Project-Specialty Crop/Food Safety Risk Management Module	7	199
HACCP Training	1	13
MarketReady	2	61 (44 facilitators trained; 17 farmers trained)
Writing Your Food Safety Plan	3	78
Producer Mixer Series	3	106
Better Process Control School	1	15 (10 companies; 5 service providers)
Sm Farm Conference- Agritourism/Specialty Crop Farm Safety Workshop	1	23
Good Handling Practices/Good Agricultural Practices (GHP/GAP)	4	111
TOTAL	22	606

- The impact of this training is demonstrated by the following documented metrics and actions:
 - Total farms incorporating food/farm safety components into their business and operating plans specific to specialty crops-185 (From follow-up surveys; of the 111 participants that attended GHP/GAP training 68 producers indicated food safety based management practices that would be added to their production protocol (i.e. develop and utilize training logs, write and adhere to a specialty crop based food safety plan, participate in additional food safety based courses). The additional individuals that have indicated this increased attention to food safety protocols came from the other trainings such as Annie’s Project. The

stated outcome was met with additional obtainment from other non-GHP/GAP training specialty crop food safety exposure). Follow up surveys show long-term implementation through participation in additional trainings, resource and food safety plan sharing with other specialty crop producers and processors.)

- Number of buyer/seller introductions-195 (based on event & post-event surveys; follow up surveys did not indicate any actual sales so baseline economic data was not collected)
- Number of new companies receiving training-29
- Number of new specialty crops/value added specialty crops on the market after training-59 (Examples include hummus and black bean dip, serrano ginger pepper sauce, spiced apple citrus toddy ham jam, spiced grape jam, hot sauce, frozen fresh vegetables-commercial, fresh produce including cider, apples, pears, peaches, blueberries, pumpkins, potatoes, green onions, snap peas, honey, etc.)
- Although the state has GHP/GAP audited entities, no one chose to participate in the cost share opportunity. The funds for this activity were redistributed.

BENEFICIARIES

The clear beneficiaries of this project are the educational participants who gained knowledge and skills in the production, processing and marketing of their specialty crops (606 documented). Generation of new products in the marketplace benefit the market and provide economic impact at the farm and community level (59 new products; 29 new companies). An increased awareness of food safety and the development of risk based planning create additional market opportunities and benefit producers and processors with increased demand. This is beneficial at the farm and market level.

LESSONS LEARNED

Coordination of these events and follow up to determine results was difficult and is probably under reported in the outcomes section. Standardized questions directly related to the stated outcomes in an electronic format are being prepared for future trainings and greater accuracy in reported results should be a result.

For the GHP/GAP training program, a transition from non-audited specialty crop production to audited entities has been difficult. Although the number of audited farms in the state has doubled in 2015, this certification remains a major barrier for transition from direct marketing to commercial marketing as well as new market development.

In the value added niche, the loss of several producers (an industry that, like traditional crop farming, has a very high older demographic) and products made the new processors/products generated by the BPCS training an even exchange. This is particularly disturbing in that no growth was recognized throughout the grant period but statewide, supply was maintained.

CONTACT PERSON

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ADDITIONAL INFORMATION



**Writing YOUR Food
Safety Plan**



May 14, 2015

Guthrie Agricultural Center

Presented by:

West Virginia Department of Agriculture
Walt Helmick, Commissioner

Funding for this program and resources was made possible by the USDA Specialty Crop Block Grant

PROJECT TITLE

**West Virginia Department of Agriculture “Specialty Crops Outreach” Amount
Awarded: \$14,630.70**

PROJECT SUMMARY

Knowledge and awareness of specialty crops to the general public is critical to generate interest as well as buyer demand to enhance the efforts of the production and manufacturing efforts in the state. Identifying and creating new markets through buyer/seller introductions and market promotion were the focus of this project.

Consumer awareness of West Virginia specialty crops on a state and regional level provided the rationale for this project. Building on previous project success and the desire to include new specialty crop growers and processors (building on new companies trained in this and previous grant cycles) with increased market access, this project focused on providing tools and consumer interaction within the marketplace. Two of the events proposed (Fancy Foods and Southern Christmas Show) were successful in the past providing promotional scenarios and training for buyer/seller introductions and larger market access. This project provided additional opportunities (i.e. focused buyer/seller introductions). Statewide promotions were conducted based on previous exposure (earned media) and the opportunity to promote specific specialty crops to the mass media. Previously, these promotions were the most effective way to provide multiple imprints (repeat broadcasts) to a large audience. For this round of funding, project participants were asked to indicate their increase in farmers’ market specialty crop purchasing for the upcoming season.

PROJECT APPROACH

The scaled down project encompassed four projects promoting specialty crops on a state- wide, regional and national level.

Two satellite uplinks provided live feeds throughout the state in May of 2013 and February of 2015. The May event was shot live at the Capitol Farmers Market and focused on the upcoming fruit and vegetable season. Noon live news feeds were provided with 10 outdoor specialty crop vendors featured. The message encouraged viewers to include the market and specialty crops in their shopping plans, encourage additional crop plantings in their season home garden season extension plans as well as look for the opening of farmers markets in the region (15 identified in a 6 county area).

The 2012 Southern Christmas Show in Charlotte historically was a marketing and training opportunities for value added producers in the state. In 2012, the emphasis on value added specialty crops was scaled back as the loss of several processors and the need to train (sampling, customer interaction, market development) became apparent. Assistance in sampling, customer interaction and sales was provided for new vendors while value added specialty crop vendors took one more step towards project sustainability.

The project focused solely on specialty crops and the inability to complete several activities (i.e. enough specialty crop participants in Fancy Food) demonstrated attention to detail in terms of eligibility and adherence to program guidelines. A shift in administration from regional and national promotional opportunities meant that several of the originally proposed activities (Fancy Food, Southern Christmas Show) were either significantly scaled down or

cancelled. Remaining funds for this project (two regional and national events) were reallocated.

Project partners in this initiative included the Division of Tourism, specialty crop growers and processors (71 total including outdoor market vendors, Winter Blues' vendors, Southern Christmas Show participants and Fancy Food Show participants) as well as consumers who were exposed to specialty crops through the media promotion.

GOALS AND OUTCOMES ACHIEVED

For the May, 2013 press event, 11 news affiliates and 23 spots and 23 minutes of specialty crop coverage was provided. TV stations in Charleston, Clarksburg, Wheeling, Beckley, Parkersburg, Harrisonburg VA, Hagerstown MD, Bluefield and Bridgeport made this a truly statewide media blitz. The total verified earned income report for this segment generated \$42,000 worth of return on investment of 94%. A review of outdoor market vendor revenue (self-reported) cited a 3% increase in specialty crops (fruits, vegetables, bedding plants) over the previous May.

For the February, 2015 event, the venue was the Winter Blues Farmer's Market as part of the 2015 Small Farm Conference. Five specialty crop vendors (with hydroponic greens, apples and winter high tunnel vegetables, and maple syrup products) were interviewed and the piece was sent out to 11 TV stations statewide. Markets represented included Charleston, Clarksburg, Bridgeport, Beckley, Wheeling, Parkersburg, Hagerstown MD, Bluefield and Oak Hill. Twenty-six one minute segments were uploaded with an earned media value was verified at \$39,500 representing a 96% return on investment. The market event (4.5 hours) yielded \$9,500.00 of venue revenue with \$6,800.00 in specialty crop sales (71.5% of total).

Value added specialty crops were sampled and sold at the 2012 event but declining sales (- 15%), increased competition and new priorities towards in-state sales mean that this was the last year for this event. Eight specialty crop vendors took advantage of the support provided by this activity contributing 21 new products to the inventory.

Following the trend and new administration priorities, participation in the 2012 NY Fancy Food Show was limited by specialty crop participants. A scaled down state pavilion and ineligible products meant that the project goals were not met with this activity.

BENEFICIARIES

A range of beneficiaries for this project were identified. New and expanding growers and manufacturers were offered opportunities to enter new markets. A media presence focused on specialty crops was generated and released two a statewide audience of more than 2 million impressions increasing consumer knowledge and awareness of market outlets. The 100,000 attendees at the So. Christmas Show were the beneficiaries of new products and buyer/seller interaction. The Capitol Market, surrounding farmers markets and Winter Blues Market vendors and consumers benefitted from the knowledge and event promotion provided by the pre-event media coverage.

LESSONS LEARNED

The media efforts proved to be a highly effective promotion technique though precise

measurement of the outcomes are difficult to determine. In the future, promotions with solid outcome measurement are warranted.

A shift in the focus of markets from regional and national to in-state caused a need to shift programs, focus and resources. A majority of the funds allocated for this project were used for other activities in the State Plan to benefit specialty crops and make the needed adjustments.

The elimination of two of the activities (Fancy Food and So. Christmas Show) show that the organization (WVDA) is examining its activities directed to specialty crop from production focus (increase the number of producers/processors and quantity of available product) and attempting to carry out activities that have a maximize ROI to the individual producers and industry.

CONTACT PERSON

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West Virginia Department of Agriculture
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PROJECT TITLE

2015 West Virginia Urban Agriculture Conference: Specialty Crop Activities & Horticulture Track

Amount Awarded: \$11,387.48 (\$577.51 unexpended); \$10,809.97 spent

PROJECT SUMMARY

The second annual West Virginia Urban Agriculture Conference was held in September 2015. Based on 2014 event feedback, an emphasis on specialty crop production and opportunities was warranted and a full specialty crop track was developed. Providing critical production and business information to incentivize urban producers to efficiently and commercially grow specialty crops was the target of the track and this project that supported the resources and expertise.

This project addressed the need identified in the 2014 event comments and provided robust reporting and evaluation from participants on future specialty crop needs in terms of education and resources. The conference emphasis on providing fresh, locally grown specialty crops to families, projects and urban spaces through innovation and sound practices also extend to developing small, urban based specialty crop agribusinesses. The horticulture track funded by the SCBGP helped solve the targeted need.

This project was not previously funded by the SCBGP or SCBGP-FB.

PROJECT APPROACH

Through the planning and execution of a specialty crop specific track at the 2nd annual WV Urban Agriculture Conference, the curriculum was planned to generate interest, opportunities and skills for new/beginning specialty crop producers to consider commercial production. A focus on specialty crops during the break session from a focused culinary demonstration provided additional interaction with producers, processors and ag service providers. A rigorous evaluation process at the end of each breakout provided data on workshop effectiveness as well as a chance to determine future needs in terms of education and technical assistance. Specific specialty crop tracks and speakers included:

"Urban Small Fruits 101"	Brad Cochran-WV State University (review of a SCBGP project and steps to become involved in post-project activities)
"Understanding Tools and Equipment for the Urban Farm"	Andy Pressman-NCAT/ATTRA; equipment scale for specialty crop production
"Urban Farming: Managing Risks and Increasing Profits"	Andy Pressman-NCAT/ATTRA; business planning techniques for specialty crop producers
"Developing Your Integrated Pest Management Plan"	Dr. Barbara Liedl, WV State University
"Installing Drip Irrigation for Any Size Space"	Chris Postalwait, WV State University
"Vertical Production"	Melissa Stewart, WV State University; specialty crop alternative production

“Cool Season Crops”	Lewis Jett, WV University
“Setting Your Market Price”	Dr. Doolarie Singh-Knights, WV University
“Heirlooms, Hybrids & GMOS	Joseph Tychonnievich, Author
“Budgeting & Risk Management”	Dr. Doolarie Singh-Knights, WV University; business planning for specialty crop producers
“Cooking In Season”	Mary Beth Lind, author and chef; using specialty crops in the restaurant and direct marketing sectors
“Low Tunnels/Small Scale Season Extension”	Lew Jett, WV University
“Plant Breeding for the Home Gardener”	Joseph Tychonievich, author; using techniques for efficient and expanded specialty crop production
“Specialty Crops Feature”	April Hamilton, chef and author; using specialty crops for menus and show; demonstration using maple syrup, carrots, peppers, onions, eggplant and a market basket

Multiple project partners were involved in this project. The specialty crop track was planned by staff at West Virginia State University, Capitol Soil Conservation District, West Virginia Department of Agriculture, and West Virginia University Extension. West Virginia State University provided the survey tool and data analysis portion of the project to determine funding impact. Conference participants provided the engagement in the track and service providers were able to develop materials and programs specific to specialty crop production in an urban setting.

GOALS AND OUTCOMES ACHIEVED

The robust evaluation program solicited comments from each of the sessions providing a range of quality results.

Joseph Tychonievich presented sessions as well as the capstone session. Participants were asked to provide a pre-session evaluation of their knowledge and interest of the topic before the session and again at the conclusion. For the capstone speaker, the pre-session evaluation was a 2 out of 5 and rose to 4.25 at the conclusion of the presentation. Photos, a light hearted presentation and the clear instructions meant that of the 49 respondents, 68% plan on growing hybrids and expanding their specialty crop production in 2016. In his Heirloom session, a .25 point increase in knowledge and lessons learned was documented with comments about advantages in disease resistance and planting planning.

Andy Pressman’s lunch session witnessed a 1.67 increase in knowledge and resources with consistent comments about resource provision, multiple suggestions on using whole farm concepts throughout the WV specialty crops spectrum, farming for gross income not maximum acres as well as statements about specialty crops production for hobby enterprises versus business. Other notable session results include:

- a. IPM management-+1.25 increase in knowledge and skills with comments pointing to revisions, specific product usage and the importance in diversity in IPM integration.

- b. The Cooking in Season session provided an impressive +1.68 from session beginning to end with lessons learned including, specialty crop skins as a cooking ingredient, local foods can be used year round with production planning, and the importance of showing variety and diversity in specialty crops to chefs and consumers; ongoing learning process that the grower needs to be a part of.
- c. The influx of high tunnels presents unique needs in terms of learning new cropping patterns and production techniques. The session evaluations showed an increase of +2.0 pre to post evaluation demonstrating that the interest and technical knowledge need is critical for this growing technique. Comments included the importance of irrigation incorporation as well as consistent standards and practices.
- d. Though skewed by low participation, the vertical growing of specialty crops witnessed a +2.8 increase pre and post while noting that this is a relatively new concept. Questions about the cost of infrastructure/start up combined with a new concept is of interest and to concern.
- e. The Cool Season Crop session provided basic information about high and low tunnel off season production with a +0.87 increase. Participants focused on basic production techniques such as row covers and varietal mixes.

The above evaluation analysis demonstrated the level of detail that session participants provided. Although overall conference participation was down, the following outcomes were recognized:

Outcome	Target	Achieved	Assessment
At least 208 participants will be documented as attending a Horticulture/specialty crop based session	208	319	Reports from room proctors on total attendees; conference participation down from previous years; multiple other choices per session
200 surveys detailing knowledge gained in a session will be administered and tabulated	200	284	Total number of completed surveys included in tabulation
Through survey feedback and analysis, at least 5 participants will request additional technical assistance in specialty crop production provided by the conference agriculture service	5	20	Includes requests for additional information, site visits, additional educational programs and planting schedules (particularly season extension and multiple croppings in

providers			urban/alternative environments)
At least 45 new specialty crop production practices will be documented through survey feedback	45	89	New practices included additional or new specialty crops planted, season extension plantings, varietal choices, increased recordkeeping, additional information and implementation of vertical, high or low production practices

BENEFICIARIES

The conference participants (175) were the initial beneficiaries of this project. Based on the evaluations and feedback, increased knowledge, resources and production efficiencies become critical building blocks for those who begin or expand commercial specialty crop production. The resulting increase in efficiencies at the production and business implementation stages mean higher quality products, increased availability, and diversity and choice in specialty crops in the marketplace. Commitment by producers to provide these crops and involvement in the process including consumer education and supply mean that additional beneficiaries to this activity includes consumers and an improved marketplace with specialty crops.

LESSONS LEARNED

The Urban Ag Conference and the concept of growing specialty crops in a small area with maximum efficiencies is a popular innovation in the agribusiness community in West Virginia. Shifting the conference timing proved difficult for the second year as there were many conflicts with markets and events during the September timeframe. Although the organizers were disappointed in the participation, the rigorous evaluation program pointed to a specialty crop track that provided innovation, solid production fundamentals and opportunities in the specialty crop arena. Future follow up to see if the evaluations yield actual increased production will be the next step in evaluating the success of this project after its implementation.

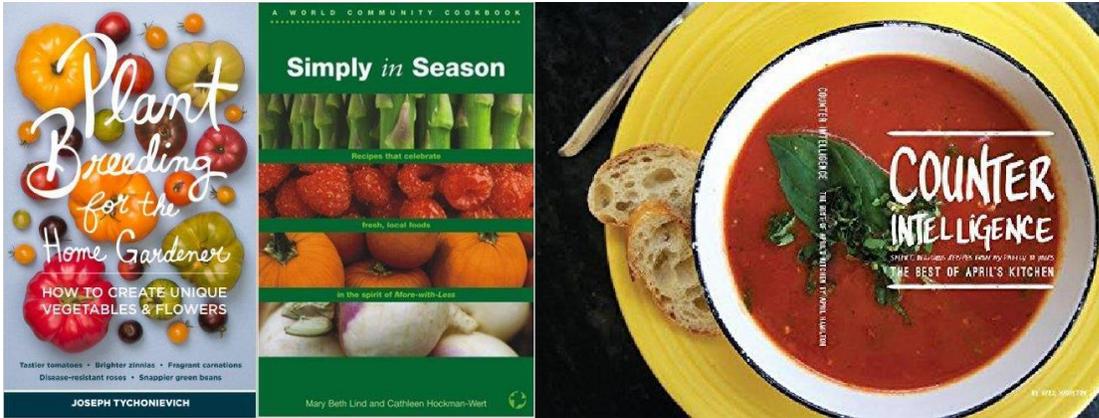
The provision of supplemental materials (i.e. books, workbooks, handouts, etc.) proved to be very beneficial in terms of increasing participant knowledge. Participants liked that they left with something tangible to reinforce their learning and guide future implementation.

CONTACT PERSON

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ADDITIONAL INFORMATION



ACTIVITY TITLE

WVDA Staff Training Amount

Awarded: \$7,767.37

Successfully completed the following Management Concept programs:

“Managing Federal Grants & Cooperative Agreements for Recipients”

(Cindy Martel, Melissa Beller and Tanner Graham)

“Applying for Federal Grants and Cooperative Agreements”

(Tanner Graham)

Cost Principles for Federal Grants: 2 CFR 200 (Subpart E) and FAR 31.2”

(Cindy Martel & Tanner Graham)

“Uniform Administrative Requirements: OMB Circular A-102 & 2C”

(Cindy Martel)

Staff Training DVD-Federal Fund Management Advisor

“February 26, 2015 Webinar-What Flows Through?-How to Apply OMB’s New Uniform Requirements to ‘Lower Tier’ Organizations”