Alabama Department of Agriculture & Industries
Specialty Crop Block Grant Program
Final Report
2013 SCBGP
12-25-B-1652

December 27, 2016

Prepared for: Mr. Garland Robertson

Prepared by: Johnny Blackmon

Project Coordinator:
Johnny Blackmon
Alabama Department of Agriculture & Industries

2013 SCBGP PROPOSAL SELECTIONS
USDA ALLOCATION = $384,849.24

Organization	Project Title	Amount
Auburn University	Enhancing Production System for Specialty Crops	$60,000.00
Food Bank of North Alabama	Farm Food Collaborative	$25,000.00
Alabama Cooperative Extension System	"Small Business Opportunities through Specialty Crop Production".	$19,901.85
Shoals Entrepreneurial Center, Inc.	Help Build A Sustainable Economy Through The Development And Implementation Of A Local And Regional Food Marketing/Branding Initiative	$19,339.00
Alabama Fruit and Vegetable Growers Association (AFVGA)	Expanding the Scope and Impact of the Alabama Fruit and Vegetable Growers Association (AFVGA) on Specialty Crop Producers Statewide	$24,729
Cullman County Soil and Water Conservation District	Plasticulture equipment for Cullman County Citizens	$11,100.00
University of North Alabama	From Culinary Tower to Community Table – Increasing the growth and consumption of local produce through aeroponic gardening	$17,369
Volunteers of America Southeast	Community Gardens: Growing Our Community Through Shared Gardens	$24,442.00
Homewood City Schools	Homewood City Schools Community Garden	$18,300
Alabama Cooperative Extension System	Developing a Statewide Organic and Small Farm Vegetable Pest Management Educational Campaign for Specialty Crop Producers	$24,669
City of Mobile	AFRICATOWN U.S.A., MOBILE, ALABAMA - COMMUNITY AND HOMESTEAD GARDEN PROGRAM	$23,000.00
The Deep South Food Alliance	Improving Volume and Quality of Vegetable Production of Historically Disadvantaged Farmers by Integrating Low Cost Tunnel House Production with Sustainable Mini Plasticulture Farming Methods.	$25,000.00
The Alabama State Association of Cooperatives	2013 SANKOFA YOUTH AGRICULTURAL PROJECT	$25,000.00
Alabama Department of Agriculture	Direct Cost	$43,165.26
Alabama Department of Agriculture	In-direct cost	$17,412.13
	TOTAL:	***$378,427.24***

Project 1
(Approved Final Report by USDA-AMS in December 2015)

I. Enhancing Production Systems for Specialty Crops

a. Project Investigator: James D. Spiers
b. Co-Project Investigators: Jeremy M. Pickens, Glenn B. Fain, Jeff L. Sibley

II. Project Summary:

The initial purpose of this project was to conduct cultivar evaluations on prominent and potential specialty crops for Alabama and the Southeast, and to present this information to stakeholders at commodity meetings held annually in Alabama. One of the primary reasons this goal was created was the fact that several cultivar trials throughout Alabama were not being evaluated at the time. In response, a research program focused on specialty crop production in Alabama, an area where few resources were previously allocated, was created. Previous to this project, many specialty crop producers throughout Alabama did not have access to timely, research-based information on their crops and, as a result, looked to land grant experiment stations or extension systems from neighboring states for support. Therefore, awarded funds from this project were used to hire a faculty member in Auburn University's Department of Horticulture whose research program would focus on diverse specialty crop production in Alabama.

III. Project Approach:

In January 2014, candidates for tenure-track position and project investigator for the cultivar evaluations included in proposal were interviewed. Dr. Daniel Wells was hired in May 2014 as an assistant professor and project investigator for this project.

Since Dr. Wells began his tenure, several projects related to those proposed have been initiated. Dr. Wells utilized his first year on the job to become familiar with specialty crop production in Alabama while also being involved in several new and ongoing projects.

Pecan Research

Dr. Wells has initiated a pecan research program that is focused on cultural practices to improve pecan production in Alabama. He currently has two Ph.D.-level graduate students working on research projects directly related to pecan production in Alabama. One project is focused on orchard management practices and how they affect nutritional aspects of pecans. Results from this project should provide valuable information to Alabama pecan growers that will improve their orchard management decision-making and should provide growers with a marketing tool for both domestic and international markets.

The second pecan project, directed by Dr. Wells, is focused on irrigation and phosphorus nutrition of pecan. The aim of this project is to improve phosphorus fertilizer application techniques and provide Alabama pecan growers with information that will improve yield while not impairing pecan quality.

Other pecan projects underway include weed control in organic pecan orchards, foliar and nut scab control in organic orchards, and cultivar evaluation for Alabama orchards.

The organic weed control experiment has been terminated. Data are being analyzed, but preliminary results are as follows. Organic weed control methods, including mechanical mowing, flaming, mulching with pine bark nuggets, vinegar application, and a combination of pine bark

mulch and vinegar were evaluated over the past two years. The combination of pine bark mulch and vinegar provided the best overall vegetative control at all sampling dates. Mulching with pine bark nuggets alone provided similar control for the first year, but control decreased in subsequent years. Vinegar alone and flaming treatments provided some vegetative control without the use of mulch, but were inferior overall to the mulch-vinegar combination. While the combination of mulch and vinegar provides superior weed control compared to the other strategies, the presence of mulch can cause difficulties when harvesting the crop.

The organic fungicide experiment is ongoing, but preliminary results are as follows. Organic fungicides including Bordeaux mixture, Serenade, Regalia, Nordox, and Sulfur are being evaluated for efficacy in controlling leaf and nut scab in 'Desirable' and 'Surprize' cultivars. Foliar scab ratings were measured in June of 2014 and 2015 while nut scab ratings and nut weights were measured in June and August of both years. In June 2014, Bordeaux mixture provided the best control of nut scab while Nordox provided the least control in 'Desirable' trees. Results were similar in August 2014. Nut weights were highest on 'Desirable' trees treated with Bordeaux mixture and were lowest on trees treated with Regalia and Nordox in August 2014. Data were similar in 2015 with Bordeaux mixture providing superior control of nut scab and highest nut weights in 'Desirable' trees. Harvest data was taken in 2015, but has not been analyzed.

High Tunnel and Greenhouse Research

Several projects, focusing on protected crop production in Alabama, have been initiated by Dr. Wells across the state.

In September 2014, a project investigating the viability of high tunnels to extend the season for field pea production in southeast Alabama was initiated. Initial results were encouraging. However, crop failure occurred due to inadvertent herbicide drift.

In March 2015, a multidisciplinary project was initiated to investigate integrated fish and vegetable production (aquaponics) in Alabama. Dr. Wells is the Department of Horticulture's representative on this multi-departmental project and oversees the greenhouse vegetable production portion of the project. Goals of the project include developing enterprise budgets for aquaponic systems in Alabama, quantifying nutrient and water use efficiencies in aquaponic systems, and optimizing aquaponic system configurations for Alabama. This project is in its initial stages, but will hopefully provide Alabama farmers with options for diversification and profit maximization.

From June to August 2015, an experiment was conducted, under the direction of Dr. Wells, investigating recovered pond algae as a nitrogen (N) source for greenhouse-grown plants.

Petunias fertilized with algae as the primary N source produced biomass comparable to those fertilized with a commercially-available N fertilizer. Plants topdressed with algae had greater shoot growth than those fertilized with algae that was incorporated into the growth substrate. There were no differences in flowering due to N source. These initial results indicate that algae, recovered from catfish ponds, is a viable N source for greenhouse-grown crops.

In August 2015, a series of experiments were initiated to determine heat tolerance of several varieties of lettuce grown hydroponically in a greenhouse with the goal of improving recommendations for greenhouse lettuce growers in Alabama. This project will continue through 2016.

Other Specialty Crop Research

Peach cultivar evaluations were conducted and included the addition of new selections from breeding lines out of Arkansas and Georgia. The blackberry cultivar evaluation was significantly enhanced by updating the trial to include currently relevant cultivars, as well as the addition of selections of promising plant material out of the Arkansas breeding program. These selections were planted in September 2014 and evaluations are ongoing. New Pluot and plumcot varieties are currently being evaluated at the Chilton County Research Center, as well, and will hopefully provide growers with more fruit tree options in the future.

Dr. Daniel Wells was the lead on this project and has been actively involved in this cultivar research since his hire date in May 2014. Dr. James Spiers presented research at meetings prior to Dr. Wells' hire date to inform stakeholders of cultivar performance evaluations currently underway. Drs. Jeremy Pickens, Glenn Fain, and Jeff Sibley have provided significant contributions related to the focus of this research and the implementation.

Presentations

Research pertaining to this project was presented at the Southern Region ASHS meeting in Dallas, TX (January 31- February 2, 2014), the 2014 Alabama Fruit and Vegetable Growers Meeting in Auburn, AL (February 8, 2014), the Farm, Home and Wildlife Expo in Clanton, AL (August 2, 2014; August 1, 2015), the Gulf Coast Fruit and Vegetable Growers Annual Conference (January 15, 2015), and at the Alabama Pecan Growers Association Annual Meeting (September 18, 2014; September 17, 2015).

Research pertaining to this project will also be presented at the Southern Region ASHS meeting to be held in San Antonio, TX (February 5-7, 2016), the 2016 Alabama Fruit and Vegetable Growers Meeting in Clanton, AL (November 2016), the Farm, Home, and Wildlife Expo in Clanton, AL (August 2016), and the Alabama Pecan Growers Association Annual Meeting (September 2016).

IV. Goals and Outcomes Achieved and Beneficiaries

A fundamental goal of this project that was achieved was the creation of a research program focused on small acreage, specialty crops produced in Alabama. In addition, data recorded in this research program was disseminated to growers across the state of Alabama at several commodity group meetings. Attendance at these commodity meetings was recorded or estimated and presented below (Table 1).

Table 1. Attendance at Alabama Commodity Meetings at which research pertaining to this project was presented

Meeting Name	Date	No. of Attendees
Alabama Fruit and Vegetable Growers	February 8, 2014	300*
Farm, Home, and Wildlife Expo	August 2, 2014	900*
Alabama Pecan Growers Association Meeting	September 18, 2014	58
Gulf Coast Fruit and Vegetable Association	January 15, 2015	31
Farm, Home, and Wildlife Expo	August 1, 2015	800*

*estimation due to large crowd.

Results from this project have been made available to more than 2,100 people in the state of Alabama alone. Results from this research have also been presented to growers and researchers at out-of-state meetings. A long-term goal set for this project is that specialty crop producers in Alabama would adopt cultural practices and/or cultivars recommended by research from this project. We projected the percentage of growers that would plant new cultivars or adopt new practices to be 50% of those reached. However, this is a long-term goal of the project that will continue to be measured. Additionally, we expected acreage devoted to specialty crops to increase by 5% with a goal of 10% which would likely lead to an additional $5-$15 million increase in Alabama farm income. We will not know the short-term or long-term impact of this project until the next NASS census is released in the coming year. We expect increases in specialty crop acreage and sales in Alabama for the next several years.

V. Lessons Learned

We encountered some delays with the implementation of this project. The primary delay that required adjusting the timeline to include 2015, was the delay in hiring Dr. Wells to conduct this research. We initially thought that a candidate would be hired in January of 2014, but there were complications in getting the position announced, therefore the interview process was adjusted to January – February 2014 instead of anticipated August – November 2013 timeline. Also, the peach *Armillaria* rootstock study was removed from this study due to poor record keeping prior to the start of this project. The plot map is inaccurate and treatments were not accurately recorded and mapped in order to derive accurate results. In addition, although Chinese chestnut cultivar data was collected in 2014, we suspect the plot map may not be completely accurate. We determined that collected data was not valid based on the map discrepancies. Therefore, Chinese chestnut cultivar recommendations were not made to growers. We were hopeful that at least one historically evaluated cultivar developed at Auburn University would be patented and released for human consumption as a partial result of this project. However, we have since learned that this cultivar is already available in Missouri, and possibly elsewhere, and is likely no longer patentable.

We originally proposed to assist the National Agriculture Statistics Service (NASS) with their 2015 census of specialty crops. However, we were informed that our services would not be needed. Therefore, census work was not part of this project.

Although the funding period for this project has ended, the series of projects described above will continue. Dr. Wells' overall research program is highly varied and addresses many types of specialty crops important to Alabama growers.

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FOOD BANK OF NORTH ALABAMA

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State Department of Agriculture: Alabama Department of Agriculture & Industries
1445 Federal Drive
Montgomery, AL 36107

State Point of Contact: Hassey Brooks / Johnny Blackmon

USDA AMS Agreement Number: 12-25-B-1652

Type of Report: Final Report

Date Submitted: August 25, 2016

Project Title: Farm Food Collaborative: Linking Specialty Crop Producers to Institutional Buyers

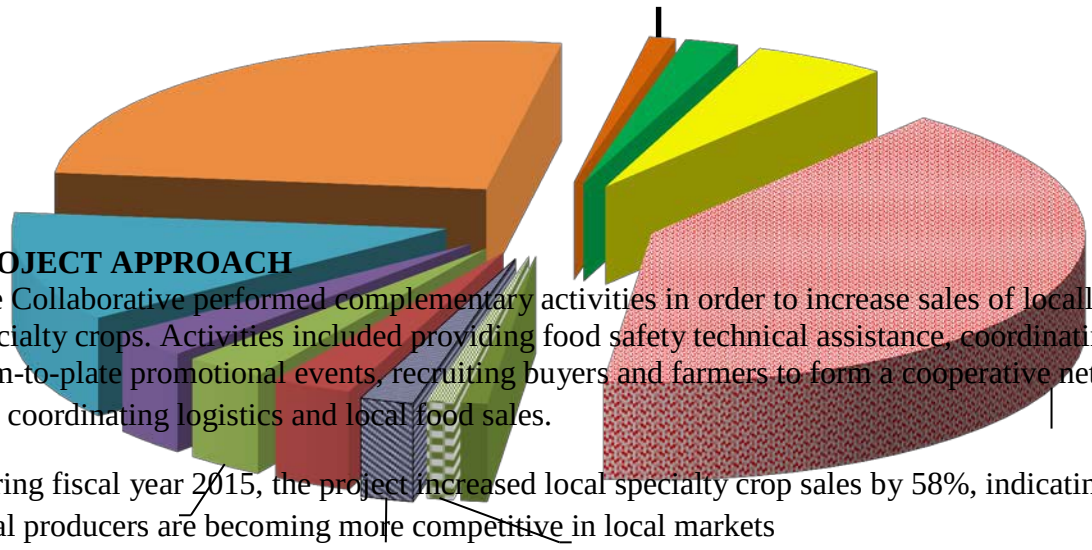
Subgrantee: Food Bank of North Alabama	**Award Amount:** $25,000
Program Name: Farm Food Collaborative	**Fund Source:** USDA/AMS **% of Funds**: 100%
Subgrant Period: 9/30/13 – 09/29/16	**Project #: 2**

Counties served: Colbert, Cullman, DeKalb, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Madison, Marshall, Morgan

The Food Bank of North Alabama is an equal opportunity provider and employer.

PROJECT SUMMARY

The Farm Food Collaborative (Collaborative) increases specialty crop producers' competitive ability to access local, wholesale markets by overcoming the barriers impeding the sale of local, specialty crops and fostering long-term relationships among producers and local institutional buyers. The Collaborative's multi-pronged competitive strategy includes increasing knowledge and consumption of local specialty crops by creatively promoting local producers, increasing producer capacity to meet buyer requirements through Good Agricultural Practices training, and leveraging shared resources among Collaborative members to build an efficient, cost-effective distribution system with a sustainable local food economy.



PROJECT APPROACH

The Collaborative performed complementary activities in order to increase sales of locally grown specialty crops. Activities included providing food safety technical assistance, coordinating farm-to-plate promotional events, recruiting buyers and farmers to form a cooperative network and coordinating logistics and local food sales.

During fiscal year 2015, the project increased local specialty crop sales by 58%, indicating that local producers are becoming more competitive in local markets

- GAP food safety certification has become a standard requirement among wholesale buyers and was a key barrier impeding special crop sales in local markets. At the project's outset, only two specialty crop farmers in the Collaborative had attained this certification - today there are 19. This accomplishment was made possible by providing one-on-one technical assistance to individual special crop producers.

- The Collaborative has also garnered significant public support and media attention for local specialty crops. For example, this recurring sale of local apples to schools in North Alabama was featured on WHNT News: http://whnt.com/2015/08/25/whnt-news-19-taking-action-to-help-children-struggling-with-hunger/

- The Collaborative hosted three Farm-to-Plate educational events this year impacting 200 children and parents. For example,

    - The Collaborative partnered with another non-profit and the City of Huntsville to host a health fair for low-income preschoolers and their families. The event featured one vegetable farmer who shared with children how he grows produce and the importance of eating healthy. Participants tasted locally grown tomatoes – and for some, it was the first time they had tasted an unprocessed, fresh tomato. Families also received fresh, local tomatoes, squash, and corn to try at home.

    - The Collaborative partnered with Auburn University/Cooperative Extension to host training for 100 school cafeteria workers. The training demonstrated ways to promote and serve local foods to children. A highlight was a talk from a local specialty crop producer who shared his farm's history and discussed heirloom varieties of apples

In summary, the accomplishments outlined above are increasing specialty crop producers' competitive ability to access local, wholesale markets and reflect the Collaborative's multi- pronged competitive strategy of increasing local demand for specialty crop produce while building specialty crop producers' capacity to meet buyer requirements.

Project partners have contributed significantly to the success of the project.

- The Food Bank of North Alabama has contributed the following:
    - Staff time including the Executive Director, the Community Food Security Director, the Business Manager, drivers and warehouse technicians;
    - Warehouse and cold storage to aggregate product;
    - Use of two reefer trucks when needed to overcome delivery barriers;
    - Acting as an invoicing agent for the Collaborative to ensure timely payments to producers;
    - Securing a product liability insurance policy for specialty crop sales facilitated through the Collaborative.

Other partners play an active and substantial role in the success of the project.

- Alabama Cooperative Extension has played a key role assisting with GAP related training and technical assistance. Alabama Department of Agriculture & Industries, Alabama Department of Education, RC&D Councils, Alabama Agriplex Heritage Center and the Top of Alabama Regional Council of Governments all actively participate in planning meetings, contributing their expertise.

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GOALS AND OUTCOMES

The chart below outlines the activities performed and compares the Collaborative's actual accomplishments to established goals through November 30, 2015.

Activity Performed	Baseline Data	Timeline	Established Performance Goal/Target	Actual Accomplishments
The Collaborative develops a specialty crop growing season price list, confirms potential specialty crop sales from institutional buyers, and coordinates specialty crop producer production schedules.	N/A	January 2015-April 2015	Pre-season planning activities increase local specialty crop sales by 40%.	**Goal Exceeded** -From October 1, 2014 to September 30, 2015 pre-planning activities led to a 58% percentage increase in sales over the initial 12 months.
The Collaborative hosts educational events that promote specialty crop producers and specialty crops.	N/A	January 2015-August 2015	Host 2 educational & promotional events.	**Goal Exceeded** – Since the project's outset, the Collaborative hosted 8 educational events that promoted specialty crops and reached 46,400 people.

				In 2015, the Collaborative hosted 3 of these educational events: (1) An educational celebration for preschoolers and their families helping them learn about locally grown apples and tomatoes; (2) a health fair in an economically distressed neighborhood that promoted the benefits of eating nutritionally dense locally grown fruits and vegetables, and (3) a training for cafeteria workers that emphasized preparation of locally grown apples and sweet potatoes. Combined, these three events reached 200 people.
Provide food safety and GAP related assistance/training to specialty crop producers.	2 specialty crop producers are GAP certified.	October 2014 – May 2015	Host one GAP training with 20 participants attending. Two specialty crop producers actively pursue GAP certification.	**Goal Exceeded** – In 2014, the Collaborative hosted two GAP trainings with 45 participants. As a result, three specialty crop producers achieved GAP certification in 2014. From October 1, 2014 to September 30, 2015 the Collaborative continued to provide one-on-one GAP related technical assistance to specialty crop producers, hosting 32 on-farm GAP training audits. As a result, the Collaborative helped 16 additional specialty crop producers attain GAP certification.

Activity Performed	Baseline Data	Timeline	Established Performance Goal/Target	Actual Accomplishment
Host 5 orientations to recruit local specialty crop producers to match buyer demand.	N/A	October 2014 – September 2015	**Target:** Recruit 5 new specialty crop producers and 4 new buyers.	**Goal Exceeded:** In 2014, the Collaborative recruited 15 new specialty crop producers and 9 buyers. Between 10/14 and 9/15, the Collaborative recruited 10 additional specialty crop producers and 5 new buyers.
The Collaborative coordinates sales and deliveries.	$80,538 in pilot sales among 4 producers and 15 buyers.	October 2014-September 2015	**Target:** Facilitate $500,000 of cumulative local specialty crop sales.	**Goal Exceeded**: Between 10/13 and 9/14, the Collaborative coordinated $145,678 worth of specialty crop sales among 15 specialty crop producers and 22 buyers. Cumulative sales reached $308,965. Between 10/14 and 9/15, the Collaborative coordinated $230,064 worth of specialty crop sales among 20 specialty crop producers and 22

				buyers. Cumulative sales reached $539,029 – exceeding the target.
The Collaborative evaluates the commitment from buyers and specialty crop producers and quantifies the potential market based on current sales.	3 buyers make routine purchases.	October 2014 – November 2015	**Target**: Recruit 6 buyers to make recurring purchases of local specialty crops.	**Goal Exceeded:** 18 buyers made recurring purchases of local specialty crops.
The Collaborative updates the pro forma, risk assessment, and the business plan. The Food Bank conducts the summative evaluation.	N/A	October 2014 – September 2015	**Target:** Host 1 annual meeting among producers and buyers.	**Goal Met:** Hosted the 2 annual meetings in 2 locations.

BENEFICIARIES

The Collaborative's primary beneficiaries include:

- 20 local specialty crop producers who attained $539,029 of additional wholesale sales that contributed to the viability of their farms;
- 16 local specialty crop producers attained a critical food safety certification qualifying them to sell into new wholesale markets;
- 22 buyers, including 2 local school districts, who were able to make purchases from local specialty crop producers; and,
- Beyond the state's specialty crop producers, other beneficiaries include local institutions and those they serve, such as school children, employees and general consumers, who as a result of the project have greater access to locally grown fruits and vegetables in a region reporting some of the highest rates of diet-related diseases in the nation.

LESSONS LEARNED

The Collaborative is fostering positive business relationships among specialty crop producers and institutional buyers. By coordinating pre-season planning, providing technical assistance for GAP certification and educational cause marketing activities, the Collaborative is increasing small and mid-sized specialty crop producers' competitiveness in local, wholesale markets. Hosting Farm-to- Plate events increases awareness of fresh, local, nutritionally dense specialty crops and generates consumer demands for these products. The Collaborative will need to plan for a long incubation period in order to build upon this initial success and cultivate reliable relationships among a network of specialty crop producers and stable, local buyers. During the project period, a key producer had a crop failure, and another key buyer went out of business. It will require time to develop a core membership of reliable buyers and producers who thrive despite the ongoing consolidation in the national marketplace.

CONTACT PERSON

Shirley Schofield
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farmfood@fbofna.org

ADDITIONAL INFORMATION

www.foodbanknorthal.org

Alabama Cooperative Extension System

Project Title:

Small Business Opportunities through Specialty Crop Production

Project Summary:

Creating employment and supplemental income for small farm operators is the primary focus of this project. Fifty percent of the farm operators in Talladega County, Alabama self-report that farming is not their primary occupation (2012 USDA Ag Census). Eight-five percent of Talladega County farms generate net farm sales of less than $25,000 per year. This level of farm sales will place these farm families below the federal poverty line unless supplemental off-farm income is acquired by a family member. Talladega County farmers are typically male (92%) Caucasian (96%) and 58 years of age.

To expand the local demand for specialty crop products, fresh vegetable nutrition programming and community market management education was included in the project to complement the crop production educational program.

Talladega County is experiencing an out-migration of young adults. The Alabama Data Center predicts that between 2010 and 2030, the county will experience an 8.2% reduction in total population. As the total population declines, the senior citizen population is projected to increase by 64%. In 2013, 15.9% of Talladega County's residents were 65 or more years old. Currently, 26.2% of the population lives below the poverty level; while 35.2% of the county's children are living below the poverty level. A quarter of the adults living in Talladega County have less than a high school education. These trends express themselves in Medicaid eligibility with 29% of the overall population being eligible for federal medical assistance; 57.6% of the children in Talladega County are Medicaid eligible and 65.3% of the births in the county were paid for by Medicaid. **These grim demographic data serve as a motivation for the Small Business Opportunities through Specialty Crop Production grant. The project will increase local income while simultaneously improving health metrics through increased fresh vegetable and fruit consumption.**

This project was not built upon a previous SCBGP or SCBGP-FB project.

Project Approach:

Community-based Extension programming designed around the two goals of:

1. Increasing local vegetable and fruit production yields and profitability through field demonstrations and tours; and
2. Increasing demand for locally produced vegetables and fruit through improved understanding of the linkage between nutrition and health were the foundation of the Small Business Opportunities through Specialty Crop Production grant.

2016 Participation in six Extension delivered educational sessions associated with the Small Business Opportunities through Specialty Crop Production grant in Talladega County, Alabama.

Gender:	Male: 42	Female: 69	Reporting participants: 111
Age Group:	Youth: 69	Adult: 42	Reporting participants: 111
Race:	White: 47	Black: 59	Reporting participants: 106

2016 Program Highlights:

1. Feb. 11, 2016: Youth Specialty Crop Workshop
    a. Educational Objectives: The youth will increase their knowledge of:
        i. Production of late winter vegetables and
        ii. Marketing of off season produce.
2. March 29, 2016; Herb Workshop
    a. Educational Objectives: the adults will increase their knowledge of:
        i. Production techniques of herbs;
        ii. Proper herb drying and freezing techniques; and
        iii. Marketing of fresh, dried, and frozen herbs.
3. May 11, 2016: Orchard Tour
    a. Educational Objectives: the adults will increase their knowledge of:
        i. Best management practices to increase fruit production;
        ii. Post-harvest practices to optimize marketable fruit quality; and
        iii. Local marketing outlets and pricing strategies.
4. June, 6, 2016: Youth Specialty Crop Workshop
    a. Educational Objectives: The youth will increase their knowledge of:
        i. Production of transplants from seeds and
        ii. Cost effectiveness of raising transplants vs. purchasing transplants
5. June, 11, 2016: Youth Specialty Crop Workshop
    a. Educational Objectives: The youth will increase their knowledge of:
        i. Effective irrigation and liquid fertilizing methods and
        ii. Diagnosing of over watering related soil conditions and diseases.
6. June 20, 2016: Food Preservation Workshop
    a. Educational Objectives: Youth and adults will increase their knowledge of:
        i. Preparation of dried vegetable products using drying techniques; and
        ii. Use of dried vegetable products in common foods.

2015 Program Highlights (Details in 2015 Annual Report)

1. Cumulatively, 3,000 Talladega County residents received nutrition information at various public events such as the Farmers' Market and Health Fair.
2. 97 residents visited a high tunnel vegetable production demonstration site;
3. $2,500 of locally produced vegetable and fruit products were sold at Holiday Fairs;
4. 6 producers acquired knowledge on how to prepare and sell produce products under the Cottage Food Law; and
5. 118 residents improved their knowledge of produce preservation and cooking techniques.

2014 Program Highlights (Details in 2014 Annual Report)

1. Cumulatively, 335 Talladega County residents received nutrition information at various public events at three Health Fairs;
2. 400 Talladega County residents received healthy recipes at Farmers' Market locations across the county;
3. 300 Talladega County residents observed the preparation of healthy recipes at six workshops;

4. 17 vegetable producers were trained in tomato best management practices;
5. 10 Farmers' Market vendors were trained on how to accept public assistance vouchers;
6. 5 producers acquired knowledge on how prepare and sell produce products under the Cottage Food Law;
7. 25 Talladega County residents participated in raised-bed vegetable production demonstrations; and
8. 9 Talladega County residents acquired knowledge on the use of frozen vegetables in healthy recipes.

Contributions of Project Partners:

1. City Recreation Directors served as Farmers' Market managers;
2. Local businesses helped market project events;
3. The local radio station and both newspapers provided free marketing of Project events;
4. Talladega Housing Authority provided meeting spaces; and
5. School teachers assisted with the raised bed youth demonstrations.

Goals and Outcomes Achieved:

1. Increasing producer adoption of cost effective vegetable and fruit production techniques such as the use of raised beds and high-tunnel houses has made an ongoing impact on local produce production and reported profitability of involved farmers;
2. Increased marketing of locally produced fresh and preserved food products has both increased farmer profits and availability of healthy foods to local households;
3. Increased awareness of how to incorporate locally produced food products in healthy recipes will impact the health of residents who increase their vegetable and fruit consumption; and
4. Youth involved in vegetable production and the preparation of healthy recipes will have an ongoing positive impact on their career choices and healthy eating habits.

Beneficiaries:

Four groups of Talladega County residents benefited from the Small Business Opportunities through Specialty Crop Production:

1. Small scale farmers who have increased their production yields and profitability as a result of expanded local markets;
2. Small scale farmers who have begun to process and market value-added food products under the Cottage Food law;
3. Youth involved in the active learning activities have learned life lessons in career awareness, personal responsibility, communications, and healthy eating; and
4. General public residents of Talladega County who have begun purchasing locally produced and marketed vegetable and fruit products experienced increased social interaction with neighbors at the Farmers' Market and adopted better eating habits.

Lessons Learned

1. Partnerships with local county and city organizations such as the recreation and parks department and housing authority have both facilitated the delivery of an effective Project and has resulted in the continuation of the Farmers' Markets at multiple locations within the county;
2. Workshops that combined youth and adult stakeholders resulted in adults serving as role models to youth, an absence of behavioral problems with the youth, and the youth helping adults with technology; and

3. Including farm supply retailers in production demonstrations allowed them to share best management practices using their products and to develop relationships with produce farmers.

Contact Person

Ms. Wanda Jurriaans; Project Leader
Talladega County Extension Coordinator (employment discontinued during 2016)
Alabama Cooperative Extension System

Project Termination Report prepared Dr. Gary Lemme, Director (phone: 334-844-5546; email: glemme@aces.edu), Alabama Cooperative Extension System from Ms. Jurriaans' files, annual reports, and system activity reports.

Additional Information

Ms. Jurriaans effectively led the Small Business Opportunities through Specialty Crop Production project from its inception in 2014 to mid-2016 when she left the employment of the Alabama Cooperative Extension System. All unspent funds (approximately $14,000) remaining in the project authorization at the time of Ms. Jurriaans' departure have been returned to the Alabama Department of Agriculture and Industries. Grant managers from both organizations have worked together to close out the account.

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Shoals Entrepreneurial Center

Name of State Dept. of Ag: Alabama Department of Agriculture & Industries

Name of State Point of Contact: Hassey Brooks

USDA AMS Agreement No.: 12-1652-25-B

Type of Report: FINAL REPORT

Date Submitted: January 6, 2016

Project Title: Help Build a Sustainable Economy through the Development of a Local & Regional Food Marketing Initiative

Project Summary

This project goal was to enhance the competitiveness of local and regional farmers who grow specialty crops. And, tried to provide a means for farmers and growers of a wide variety of products (whether raw or processed [e.g. salsas, jellies, soups, etc.]) to increase marketability and added value by making them readily available to food producers, wholesale food distributors, major grocery stores, and other similar outlets. We also wanted to match producers with our existing clients, future clients, and other food entrepreneurs interested in making products for distribution.

Project Approach

"Planter's Row" was selected as our brand identifier for products produced and distributed by area farmers as well as Shoals Commercial Culinary Center (SCC) clients. A local attorney made application for trademark for the brand.
Following the initial trademark filing, it was determined that an additional trademark "class" filing was required to adequately protect "Planter's Row". Therefore an additional filing fee of $325 was incurred as well another $525 in legal fees for the filing. The trademark includes Class 31: fresh fruits and vegetables and Class 35: marketing and branding services, namely, promoting locally grown food products.

99 Designs provided more than 30 designs for our selection process. The designs were narrowed down to 9 by Culinary Center staff with input from the Northwest Alabama RC&D Council. Local input was solicited via social media and email to vote for the top designs.

Our public awareness campaign kicked off in conjunction with the Alabama Sustainable Agriculture Network's 2013 Regional Food & Farm Forum hosted by and held at the Culinary Center for the northwest Alabama region where the initial logo unveiling was made. More than 75 growers were in attendance.

Culinary Center staff and Professional Chef Kevin Kilburn also conducted a food business-training workshop at BizTech in Huntsville, Alabama for interested parties. The workshop covered topics including, but not limited to, brand reveal, marketing, packaging, permitting and licensing, as well as the risks and rewards of starting a food business. Attendee evaluations were very positive.

Goals and Outcomes

A Food Entrepreneurial Training workshop was conducted in Huntsville. Giles McDaniel, Executive Director for the Shoals Entrepreneurial Center and the Shoals Commercial Culinary Center and Professional Chef Kevin Kilburn provided information regarding regulations for production and packaging, marketing, and steps to getting a food business started.
We also hosted the Northwest Alabama Resource Conservation & Development Council's quarterly meeting. The Council conducts community- based projects to help make our part of Alabama a better place to live. This quarterly meeting focused on the economics of producing and marketing locally produced farm products. Council members and guests were served lunch consisting of locally produced farm products. Nickie Campbell a client at the SCC prepared a meal of locally grown vegetables, and several different recipes of locally grown lamb. The Alabama Meat Goat and Sheep Producers, a division of ALFA, co-sponsored the meal. The featured speaker for the meeting was Kathryn Strickland, Executive Director of the Food Bank of North Alabama. Based in Huntsville, the Food Bank of North Alabama serves 11 counties across the northern part of Alabama. A second "focus group" meal was prepared one week later for local representatives with both goat and lamb served. ACES staff developed a survey for both meetings to get feedback from attendees. Survey results were very positive.

SCC Ex. Director and Professional Chef Kilburn participated in planning a "Lamb by the River" event for a local upcoming festival (WC Handy Festival). RC&D has secured a grant from the American Lamb Board for this event in July 2014. Chef Kilburn was the chef for the event using the SCC kitchen facility. "Lamb by the River" featured locally raised lamb and produce. Approximately 100 local patrons attended.

SCC staff identified local individuals/entities that can assist with training including the Northwest Alabama Resource Conservation & Development Council, North Alabama Food Bank, Alabama Sustainable Agriculture Network, Northwest Shoals Community College, Steve Carpenter (a local hydroponic vegetable grower and entrepreneur), and the Lauderdale & Colbert County Alabama Cooperative Extension System (ACES). We are continually working to secure other partners and online training tools to support the project. We conducted extensive online research of other programs and facilities with these type capabilities across the country.

The Shoals Culinary Center co-sponsored 3 social media training sessions hosted by the Lauderdale County Extension office. . Robbie Hillis, owner of Inbound Marketing Specialist, LLC, was the presenter. The focus of these sessions was using Facebook, Twitter, LinkedIn, and other social media outlets to promote and grow a business.

Steve Carpenter, a local farmer and owner of Jack-O-Lantern Farms, conducted a plasticulture demonstration for local farmers. Matt Copeland NRCS, discussed programs available for producers. Eight local farmers attended.

Throughout this project, the SEC staff has worked closely with the North Alabama Food Bank. The North Alabama Food Bank has undertaken a Farm Food Collaborative (FCC) Processing Facility in Huntsville, Alabama, North Alabama's FIRST local food hub. In working with this organization, it

has became evident that the depth of resources the Food Collaborative possesses could be the structure to move our specialty crop brand project forward.

The FFC conducted extensive research and shared their findings with us. Based on this information and information we have gained from other partners, we believe the benefits of a partnership with the FCC would allow us to spend project dollars at a regional level and meet our objectives more effectively.

Benificiaries

The training event which highlighted production, marketing and buisness was co-hosted by Rosita's Farm, Alabama A&M Small Farms Research Center, Alabama Sustainable Agriculture Network, the Food Bank of North Alabama, the North Alabama Revolving Loan Fund, and the ICE Lab at the College of Business Administration at the University of Alabama in Huntsville. The seminar was well received with all 36 participants. At the social media training an average attendance was 10 for each session. Most were small business owners with one farmer and one cattleman participating. Other events had small farmer turnout and is explained below.

Lessons Learned

Florence, Decatur, Fort Payne, Alabama and Franklin County Alabama training sessions were canceled due to lack of interest.

Clearly, our largest problem by far was lack of interest from local farmers. Doug Chapman of the Alabama Cooperative Extension System has extensive experience with local growers. We had in-depth discussions with Mr. Chapman regarding the lack of interest we have seen from area growers. It is Mr. Chapman's experience that farmers are not receptive to the potential of sharing their profits with other farmers. However, we feel the success of an existing collaborative such as the FFC might demonstrate the profitability of such an effort for our local farmers. In short, if other farmers in the area could have experienced first hand the benefits and profitability potential that access to additional markets could afford them (through farmer's who were already members with the FFC) they might grow products and take advantage of that outlet.

Another deterrent for the farmers was the newly outlined Safety Standards and GAP certification requirements. .

Case studies shared with us by the FFC included valuable information that effectively eliminated the need for travel to Blue Ridge Ventures in North Carolina.

Unfortunately, we were unable to work out a partnership with the FCC. It is our opinion that because the FCC was much more advanced in their project, the Planter's Row project was not an attractive partnership for their endeavor. We approached them about utilizing a portion of our remaining grant funds in promoting the Farm Food Collaborative to include the Shoals area and Planter's Row as a satellite brand. Although, this seemed doable upon initial conversations, we were unable to work out an agreement. The FCC was not amenable to including the Shoals area and/or the "Planter's Row" as a satellite brand or to including the Planter's Row logo on the FCC's printed materials.

Additonal Information

Unfortunately, we were unable to work out a partnership agreement with the FCC. It is our opinion that because the FCC was much more advanced in their project, the Planter's Row project was not an attractive partnership to their organization. We did approach them about using some of our project funds in promoting the Food Collaborative to include the Shoals area and Planter's Row as

a satellite brand. However, they did not express interest in including the Shoals area and/or including the “Planter’s Row” logo on printed materials.

At this time, we feel that we have exhausted all resources in completing this project as originally set forth. Therefore, it is with much regret we request permission to terminate our agreement with the Alabama Department of Agriculture & Industries and agree to forfeit the remaining grant funds of $14,560.03.

Previously invoiced $4,778.97; no further expenses have been incurred.

Giles McDaniel
Shoals Culinary Center
256-764-0044

Annual Report

USDA SPECIALTY CROP BLOCK GRANT 2013

Project Title and Abstract:

Title: Expanding the Scope and Impact of the Alabama Fruit and Vegetable Growers Association (AFVGA) on Specialty Crop Producers Statewide

Auburn University support personnel:
ACES Contract & Grants Specialist: Juanita Winegar, 334-844-5535, winegjm@aces.edu
Technical Advisor: Ayanava Majumdar, Extension Entomologist, 251-331-8416, bugdoctor@auburn.edu

beneficiaries, etc.

☐ Provide the project's title: Building a new "knowledge infrastructure": Integrating hands-on learning methods with electronic curriculum for training new specialty crop producers and military veterans interested in agriculture

PROJECT SUMMARY

☐ Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.

Background information: Vegetable production is one of the fastest growing industries in the state and many beginning farmers are starting small farms near major city centers or marketing directly to consumers. The Alabama Small Farm/Vegetable IPM program educates over 700 participants who wish to learn cutting-edge farming system for specialty crops. Extension surveys have indicated over many years that small producers can lose over 50 percent of their crop to direct insect feeding and/or crop contamination that amounts to millions of dollars of lost income. Therefore, this proposal requested funding for continued training of small producers through direct on-farm assistance, hands-on training workshops, and electronic formats to reach every corner of the state. We also focused on closely assisting beginning farmers from a military background and underserved communities across Alabama.

Major objectives of this proposal were:

1.) Provide basic pest monitoring and integrated pest management (IPM) information to small producers via direct field training and publications. This was important for producers since pest prevention is a priority in specialty crop production. About 2500 producers statewide and regionally received direct research-based information from the Alabama Vegetable IPM project through the IPM newsletter, social media channels, and websites with a great impact on the state's economy.

2.) Develop a statewide IPM "electronic curriculum" that can be utilized by state agencies (e.g., NRCS and FSA) and nonprofit organization (e.g., incubator farms, producer organizations) to directly benefit new/beginning farmers/military veterans. This is important since beginning producers not only seek direct assistance on their farm and get annual training on technological issues, but they are also interested in self-learning tools that they can access from their phone or the comfort of their home. Using grant funds, we have established a very popular Alabama Beginning Farmer website (www.aces.edu/beginningfarms) that has become a critical resource for producers.

☐ Establish the motivation for this project by presenting the importance and timeliness of the project.

Following were the main motivating factors for this grant:

- Increasing acreage of vegetables in Alabama along with an increase in the number of small family farms.
- Increasing demand for alternative pest management strategies from farmers experiencing 50% or more crop loss without training and knowledge.
- Lack of educational infrastructure to assist Extension educators and crop advisors to provide active consultation and support to producers throughout the state.
- Lack of collaboration with state agencies and nonprofits that was improved by this grant.

☐ If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complimented and enhanced previously completed work.

This grant helped us establish a new Alabama Beginning Farmer website (www.aces.edu/beginingfarms) and strengthen the small farm IPM project (www.aces.edu/vegetableipm) that saves millions of dollars in crop losses. Together the project trained ~700 participants each year that included many current farmers, limited resource farmers in remote locations and some military veterans who were exploring farming options. All new participants that voluntarily signed up for the Alabama IPM Communicator newsletter that currently has over 2,500 subscribers in the database. This assistance will continue beyond the grant period.

PROJECT APPROACH

☐ Briefly summarize activities performed and tasks performed during the grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.

Project outputs during 2015 and 2016 calendar years supported by this grant.

Objective 1: Various IPM technology demonstrations

- Number of IPM research and demonstration locations = 10 (equivalent to 20-25 acres of vegetables)
- Direct on-farm consultation service = 25 per year, in conjunction with extension agents

Objective 2: Intensive online resource development for beginning farmers

- Number of short IPM presentations = 11 (total participants = 601)
- Number of IPM workshops = 22 (total participants = 1,156)
- Number of field days/demonstrations = 12 (total participants = 83)
- Professional training for educators = 5 (total participants = 60)
- Number of large exhibitions at grower conferences = 9 (direct contacts = 333, indirect contacts = 4,000)
- Publications: Handbooks and special publications (e.g., IPM slide chart, iBook) = 7, Extension bulletins = 4, IPM newsletter issues = 30, news releases = 15, YouTube educational videos = 12, all publications and videos are available on the Alabama Beginning Farms (www.aces.edu/beginningfarms) and Vegetable IPM websites (www.aces.edu/vegetableipm) that gets nearly 90 views per day during summer season or pest outbreaks.
- Growth in IPM newsletter subscriptions: 1,300 in 2013 to 2,500 in 2015 (92 percent increase), all blogs/articles are available at www.aces.edu/ipmcommunicator. This newsletter is now a major source of information about training events for beginning farmers as indicated from our outcomes surveys.
- Social media engagement on ‘Alabama Vegetable IPM’ and ‘Alabama Extension Commercial Horticulture’ channels on Facebook: 300 subscribers in 2013 to 1,359 subscribers at present (nearly four times increase in three years).

☐ Present the significant contributions and role of project partners in the project.

The Alabama Cooperative Extension System consists of Auburn University and Alabama A&M University. We will collaborate with Tuskegee University Cooperative Extension Program to support Extension Agent and producer training in the Black Belt of AL. The Alabama Fruit and Vegetable Growers Association and the Alabama Sustainable Agriculture Network will be collaborators in project implementation by organizing additional statewide meetings and publicizing this project through publications (electronic and print formats). Other partner organizations include NRCS, Southern Sustainable Agriculture Working Group, Federation of Southern Cooperatives, and the Food Banks of North Alabama.

GOALS AND OUTCOMES ACHIEVED

☐ Include the activities that were completed in order to achieve the performance goals and measurable outcomes for the project.

Baseline data:

- Organic IPM project for vegetable producers did not exist prior to 2010-2011. The average use of IPM tactics was under 30%.
- Producers were losing 50% of more crop to pests especially close to the harvest period.
- There was no support system for new and beginning farmers due to lack of educational materials and a comprehensive educational program.

Major outcomes from IPM project based on extension evaluations done throughout the grant period.

- The Alabama Beginning Farmer website and online resources are being used by 300+ producers statewide. The e-curriculum has 123 registered farmers and will be online shortly. Several grassroots level beginning farmer support networks have started that are archived on Operation Grow webpage, http://www.aces.edu/anr/beginningfarms/operationgrow (program for military veterans). One early effort by the county extension coordinator in Cullman resulted in increasing farm profitability of 89% respondents (44 participants) which was very encouraging. Almost 9 counties in Alabama now have extension agents, county coordinators, and producers networking together to receive annual training through a series of classes. The webpage above has many event flyers available that detail the training topics.
- Beginning farmer surveys statewide (n=46) indicated that nearly 42% participants were new to the educational program and had never received prior training. The major challenges beginning farming included access to capital (60%), farm labor (34%), information about basic farming techniques (34%), marketing avenues (35%), food safety and insurance requirements (48%), and value added agriculture (38%). Alabama Extension and statewide collaborators in this project have been diligently working on reducing some of the identified barriers and the activities will continue beyond the grant period.
- Participants really like YouTube videos (besides the handbooks/factsheets) for self-education, so we have made a series of IPM and Beginning Farmer videos with grower testimonials to increase adoption of specific agricultural practices. These videos have been watched about 6,000 times over the past three years. We featured Alabama Agriculture Commissioner, Mr. John McMillan, in the welcome video (https://youtu.be/HMUbapBaS6A). We are very thankful to Mr. McMillan and the entire staff at the Alabama Department of Agriculture and Industries for closely partnering and supporting our efforts to reach new audience.
- Overall adoption of organic IPM practices: 30% in 2013 to 72% in 2015 (almost doubled over the project period and continues to rise). Farmers directly consulting with extension (25 to 30 each year) have IPM adoption rate of 90% due to urgency to protect crops.
- About 80% producers are using IPM publications that include the SE Vegetable Handbook, IPM

Newsletter, High tunnel crop production, and Alternative Vegetable IPM slide chart (print copies for all of them exceed 15,000). These are now critical resources for producers and updated annually.

- Crop loss prevented is about 50% in vegetables crops in general. There is a strong demand from farmers to continue hands-on training and online content that farmers can check on their own.
- The average direct impact of this IPM project is about $383,000 per year. In two years (2015 and 2016), we estimate the rough direct impact to be ~$1 million.
- Indirect impact of the IPM project is estimated to be $1.6 million per year (~$3 million in a two-year period).
- Impact videos 2016: https://youtu.be/BU2KvcTUCtM
- Impact video 2015: https://youtu.be/kB37fleY6gU

IPM Newsletter Impact Survey 2016: Since 2010, the Alabama IPM Communicator newsletter has been a team publication with Regional Extension Agents, Extension Specialists, and County Extension Coordinators contributing articles about crop production, pest management, and training events. There are about 2,500 subscribers that receive 15 issues of the newsletter and 5 event notifications throughout the year. The Alabama IPM Communicator website has 230+ articles in the archive that are available as blogs for reading on mobile devices and PDF for traditional readers. Thank you to all readers for their support to the newsletter that continues to be better itself every year.

2016 IPM Newsletter Survey Highlights (n=125):

- 22% respondents were producers, 28% home gardeners, 20% educators.
- 65% producer respondents have 10+ years of farming experience, **35%** are beginning farmers
- 75% respondents live or farm in Alabama
- 60% find the articles easy to read
- Fruit IPM, Vegetable IPM, event announcement, weed control and garden IPM were the top most useful articles
- 63% attended events due to seeing them in the newsletter
- 71% respondents used IPM recommendations from the newsletter articles
- 85% recommend the IPM Communicator newsletter to others
- 40 % respondents rated the IPM Communicator as excellent when compared to obtaining information from other electronic sources
- 66% strongly agree that the IPM Communicator should continue in 2016

Newsletter Reader Comments:

- *It is good to hear of current research but even more helpful to have information presented in ways that show how it can be applied in the here and now.*
- *Keep up the great work; this is probably one of the best-kept secrets in IPM. Find ways to spread this far and wide!*
- *Keep up the good work. I enjoy reading the articles. They are timely and of great practical use. Thank you for keeping us informed.*
- *I appreciate being able to connect with Auburn's work through this format- as someone who works with a head down focus, it is easy to become disconnected from the work and advances of others (especially in this state). I think this publication is very useful and I support it- if anything I think it would be great to expand the scope of it.*

☐ If outcome measures were long term, summarize the progress that has been made towards achievement.

☐ Provide a comparison of actual accomplishments with the goals established for the reporting period.

☐ Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.

Please see answer above.

BENEFICIARIES

☐ Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.

Audience included 35% new and beginning farmers, 30% experienced producers, 15% gardeners, 10% crop advisors, and 10% educators.

☐ Clearly state the quantitative data that concerns the beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

LESSONS LEARNED

☐ Offer insights into the lessons learned by the project staff as a result of completing this project.

This section is meant to illustrate the positive and negative results and conclusions for the project.

Major issues implementing this project included the following:

- Every crop production year is different. Drought in 2016 was a major impediment for some new farmers to try new techniques.
- Farmer's attitudes to new technology is varied. Experienced producers may be resilient to making drastic changes or improvements in their production practices. New producers are very eager to learn and can be easily trained.
- More and more farmers want to learn about technology on their own, so investment in online resources must continue. Many new farmers are using social media channels to receive updates and this challenges the traditional communication channels.
- Online curriculum development requires a team effort and special caution to make it user-friendly. There are also copyright issues with university publications along with the use of original content.

☐ Provide unexpected outcomes or results that were a effect of implementing this project.

☐ If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.

CONTACT PERSON

☐ Name the Contact Person for the Project: Dr. Ayanava Majumdar, Extension Entomologist and [illegible]

☐ Telephone Number: 251-331-8416

☐ Email Address: bugdoctor@auburn.edu

ADDITIONAL INFORMATION

☐ Provide additional information available (i.e. publications, websites, photographs) that is not applicable to any of the prior sections.

AWARDS FOR THE ALABAMA VEGETABLE IPM AND BEGINNING FARMS PROGRAMS

Name	Year
Southern Region IPM Center Friends of IPM – IPM Educator Award Recognizes excellence in IPM implementation through educational programs	2017
NACAA Southern Region Winner Online Content (Alabama Vegetable IPM Website)	2016
NACAA National Category Finalist Bound Book – High Tunnel Crop Production Handbook	2015
NACAA Southern Region Communication Award: Publication – Alternative Vegetable IPM Slide Chart	2015
NACAA Southern Region Communication Award: Bound Book – High Tunnel Crop Production Handbook	2015
NACAA Southern Region Communication Award: Team Newsletter – Alabama IPM Communicator	2015
Blue Ribbon Communications Award, Southern Region American Society of Horticultural Sciences Publication – Alternative Vegetable IPM Recommendation Slide Chart	2015

National Winner, NACAA Search for Excellence Award in Sustainable Agriculture Award recognizing the impact of Alabama SARE Program (2012-2014)	2014
Southern Region IPM - Pulling Together Award Award recognizes the impacts of the Alabama IPM Communicator Newsletter	2013

Major Producer Handbooks/ Field Guides (updated annually):

[Yearly circulation = 26,500+]

1. **Majumdar, A.** 2013-2016. Commercial Horticulture Programs & People. EX-0162. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/pubs/docs/E/EX-0162/EX-0162.pdf.

2. **Majumdar,** A., Reeves, M., and A. Chambliss. 2014. High Tunnel Crop Production: Training Module for New and Beginning Farmers. ANR-2157. Alabama Cooperative Extension System, Auburn University. Print circulation: 2,150 copies. iBook downloads: 250. [Online] https://store.aces.edu/ItemDetail.aspx?ProductID=18531

   Awarded the National Finalist in Bound Book Category by the National Association of County Agricultural Agents. Other states requesting publication: FL, TN, AR, MO, NY, GA, MS.

3. **Majumdar, A.** 2014, 2015. Insect Management. *In* Master Gardener Handbook (K. Smith, Editor). ANR-0522. Alabama Cooperative Extension System, Auburn University. Circulation: 1,500.

4. Braman, K., F. Hale, and **A. Majumdar.** 2014. Beneficial insects, spiders, and mites in the southeast. UGA Extension, Circular 1055. Circulation: 4,000. [Online] http://extension.uga.edu/publications/files/pdf/C%201055_1.PDF

5. Westerfield, R., K. Braman, E. Little, F. Hale, and **A. Majumdar.** 2014. Troubleshooting vegetable production problems in the Southeast. UGA Extension, Circular 1054. Circulation: 4,000. [Online] http://extension.uga.edu/publications/files/pdf/C%201054_1.PDF

6. **Majumdar, A.,** A. Chambliss, H. Fadamiro, R. Balusu, and A. Randle. 2014. Alternative Vegetable IPM Recommendation Slide Chart. ANR-2190. Designed and published by Datalizer Inc., Addison, IL. Information Copyright by ACES. Circulation: 8,000 copies. [Online] https://store.aces.edu/ItemDetail.aspx?ProductID=18412.

   Awarded the 2015 Blue Ribbon Extension Communications Award by the American Society for Horticultural Sciences. Other state requests: FL, TN, AR, MO, NY, GA, MS, KY, NC, MD, OH, PA, MD, NE, VA, IA, TX, IL, and SC.

7. **Majumdar, A.** 2016, 2013, 2011. Home Garden Vegetables: Insect Control. ANR-1305. Alabama Cooperative Extension System, Auburn University. Circulation: 1,500. [On-line] http://www.aces.edu/pubs/docs/I/IPM-1305/IPM-1305.pdf

8. J.F. Walgenbach, G.G. Kennedy, P. Smith, R. Bessin, A. Sparks, D. Riley, **A. Majumdar,** M. Layton, F. Hale, and A.L. Morgan. 2009-2015 (annually updated). Insect Control for

Commercial Vegetables. *In* Southeastern U.S. Vegetable Crop Handbook (G.J. Holmes and J.M. Kemble, eds.). ANR-1344. Vance Publishing Corporation, Lincolnshire, IL. Publication of the book is sponsored by DuPont Agriculture, Inc. and Valent BioSciences. Circulation: 6,000. [Online] http://www.thepacker.com/sites/produce/files/SEVegGuide_2016.pdf

Awarded the 2009 Extension Publication Award – Extension Materials Award (Category: Book) from the American Society for Horticultural Science.

Extension IPM Bulletins (peer-reviewed publications):

1. **Majumdar, A.,** G. Gray, R. Balusu, and H. Fadamiro. 2015. Insect pest scouting for crucifer crops. Alabama Cooperative Extension System, Auburn University. ANR-2241. Circulation: 2,000. [Online] http://www.aces.edu/pubs/docs/A/ANR-2241/ANR-2241.pdf

2. **Majumdar, A.,** and W. Mastin. 2015. High tunnel pest exclusion system: A novel strategy for organic crop production in the south. Southern SARE Factsheet. [Online] http://www.southernsare.org/Educational-Resources/Bulletins/Southern-SARE-Bulletins/High-Tunnel-Pest-Exclusion-System-A-novel-strategy-for-organic-crop-production-in-the-South

3. **Majumdar, A.,** A. Chambliss, N. Kelly, J. Miles, G. Gray, C. Becker, G. McQueen, and L. Chapman. 2014. Tomato insect pests and scouting methods. Alabama Cooperative Extension System, Auburn University. ANR-2206. [Online] http://www.aces.edu/pubs/docs/A/ANR-2206/ANR-2206.pdf

4. **Majumdar, A.** 2014. Proper Use of Approved Insecticides in Organic Farming Systems. Alabama Cooperative Extension System, Auburn University. ANR-2085. [Online] http://www.aces.edu/pubs/docs/A/ANR-2085/ANR-2085.pdf

5. **Majumdar, A.** 2014. Understanding the USDA NOP Standards for Pest Management in Specialty Crops. Alabama Cooperative Extension System, Auburn University. ANR-2084. [Online] http://www.aces.edu/pubs/docs/A/ANR-2084/ANR-2084.pdf

6. **Pollock, C.** (Majumdar, A. 30% contribution to writing & photos). 2013. Trap cropping in vegetable production: An IPM approach in managing pests. National SARE Program Webstore. [Online] http://www.southernsare.org/Educational-Resources/Bulletins/Southern-SARE-Bulletins/Trap-Cropping-in-Vegetable-Production-An-IPM-Approach-to-Managing-Pests

7. T. Glover, and Boozer, R. 2013. High Tunnel Irrigation and Fertigation. ANR-1433. [Online] http://www.aces.edu/pubs/docs/A/ANR-1433/ANR-1433.pdf

8. Smith, K., **A. Majumdar,** C. Mitchell, J. Everest, E. Sikora, J. Kemble, and R. Ward. 2013. The Alabama Vegetable Gardener. Alabama Cooperative Extension System, Auburn University. ANR-0479. [Online] http://www.aces.edu/pubs/docs/A/ANR-0479/ANR-0479.pdf

9. Miles, J., and **A. Majumdar.** 2013. High Tunnel Construction. Alabama Cooperative Extension System, Auburn University. ANR-1434. [Online]

http://www.aces.edu/pubs/docs/A/ANR-1434/ANR-1434.pdf

10. Reeves, M., and **A. Majumdar.** 2013. High Tunnel Vegetable Production. Alabama Cooperative Extension System, Auburn University. ANR-1429. [Online] http://www.aces.edu/pubs/docs/A/ANR-1429/ANR-1429.pdf

11. **Majumdar, A.,** L. Chapman, J. Miles, C. East, M. Reeves, B. O'Rear, G. Gray, and N. Kelly. 2012. Insecticides for Commercial and Backyard Organic Vegetable Production. Alabama Cooperative Extension System, Auburn University. ANR-1428. [Online] http://www.aces.edu/pubs/docs/A/ANR-1428/ANR-1428.pdf

12. **A. Majumdar**, C. Akotsen-Mensah, and R. Boozer. 2013. Trap Crops for Managing Insect Pests. Alabama Cooperative Extension System, Auburn University. ANR-1430. [Online] http://www.aces.edu/pubs/docs/A/ANR-1430/ANR-1430.pdf

13. J. Miles, Hesselien, C., and **A. Majumdar.** 2013. Production of Cut Flowers in High Tunnels. Alabama Cooperative Extension System, Auburn University. ANR-1435. [Online] http://www.aces.edu/pubs/docs/A/ANR-1435/ANR-1435.pdf

14. **Majumdar, A.,** and C. Akotsen-Mensah. 2013. Pest Management in High Tunnel Crop Production. Alabama Cooperative Extension System, Auburn University. ANR-1432. [Online] http://www.aces.edu/pubs/docs/A/ANR-1432/ANR-1432.pdf

15. Huckabay, E., T. Weldon, **A. Majumdar.** 2013. Buying Organic – What Does it Mean? Alabama Cooperative Extension System, Auburn University. ANR-1425. [Online] http://www.aces.edu/pubs/docs/A/ANR-1425/ANR-1425.pdf

IPM Training Modules (online videos + publications for self-paced learning):

1. **Majumdar, A.,** N. Kelly, and L. Wells. 2016. Challenges to cowpea curculio management in Alabama. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/anr/ipm/Vegetable/cowpeacurculio.php

2. **Majumdar, A.,** and R. Balusu. 2015. Trap crop for yellow-margined leaf beetle management. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/anr/ipm/Vegetable/ymlbtrapcrop.php.

3. **Majumdar, A.,** and A. Chambliss. 2015. Trap crop system for squash pests. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/anr/ipm/Vegetable/squashtrapcrop.php

4. **Majumdar, A.,** and A. Chambliss. 2015. High tunnel pest exclusion system. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/anr/ipm/Vegetable/HTPE.php

5. **Majumdar, A.,** and A. Chambliss. 2015. Greenhouse vegetable IPM 101. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/anr/ipm/Vegetable/greenhouseipm.php

6. **Majumdar, A.,** and A. Chambliss. 2014. Pest exclusion basics. Alabama Cooperative Extension System, Auburn University. [Online] https://sites.aces.edu/group/commhort/vegetable/SitePages/pestexclusion.aspx

7. **Majumdar, A.,** R. Balusu, and H. Fadamiro. 2013. Alternative insecticides for vegetable producers. Alabama Cooperative Extension System, Auburn University. [Online] https://sites.aces.edu/group/commhort/vegetable/SitePages/alternative_insecticides.aspx

8. **Majumdar, A.,** M. Reeves, R. Balusu, C. Becker, and W. Datcher. 2013. Trap crops for leaffooted bugs. Alabama Cooperative Extension System, Auburn University. [Online] https://sites.aces.edu/group/commhort/vegetable/SitePages/trapcropmodule.aspx

TV Appearances:

1. **Majumdar, A.,** and S. Phelps. 2015. Crucifer insect pest management tips. Simply Southern TV Show. TV telecast on September 20, 2015. Show 125. [Online] https://youtu.be/Aa8hbUAZzCA

IPM Training Videos on Extension YouTube:

1. **Majumdar, A.,** H. Fadamiro, and P. Mask. 2016. Alabama Vegetable IPM Project: Outputs, outcomes, and impacts video report. Alabama Cooperative Extension System, Auburn University. Posted on June 28, 2016. [Online] https://youtu.be/BU2KvcTUCtM

2. **Majumdar, A.,** J. Pickens, J. Miles, W. Mastin, R. Bean, and J. Bean. 2016. High tunnel pest exclusion system for stopping leaffooted bugs. Alabama Cooperative Extension System, Auburn University. Posted on April 25, 2016. [Online] https://youtu.be/BIGUFIYmixI

3. **Majumdar, A.,** C. Becker, W. Mastin, S. Carpenter, R. Bean, and J. Bean. 2016. Introduction to high tunnel pest exclusion (HTPE). Alabama Cooperative Extension System, Auburn University. Posted on April 25, 2016. [Online] https://youtu.be/DUjD0_jYnuU.

4. **Majumdar, A.,** M. Reeves, and G. Gray. 2015. Trap cropping for insect pest management in squash (Part-2): Squash bug and vine borer control. Alabama Cooperative Extension System, Auburn University. Posted on October 12, 2015. [Online] https://youtu.be/Cnb5FvJBZlM?list=PL7KYGcKptHx-Snw-7iK49vBnfyG07TmBm

5. **Majumdar, A.,** M. Reeves, and L. Chapman. 2015. Trap cropping for insect pest management in squash (Part-1): Cucumber beetle control. Alabama Cooperative Extension System, Auburn University.. Published on October 9, 2015. [Online] https://youtu.be/4yd1jTlkrJs?list=PL7KYGcKptHx-Snw-7iK49vBnfyG07TmBm

6. **Majumdar, A.,** A. Chambliss, H. Fadamiro, and P. Mask. 2015. Alabama Vegetable IPM Impact Video. Alabama Cooperative Extension System, Auburn University. Posted on January 9, 2015. [Online] https://youtu.be/4VYJR-Ylkr4.

7. **Majumdar, A.,** C. Becker, W. Datcher, M. McQueen, and V. Cochran. 2014. Low-cost net houses for community gardens and urban farms. Alabama Cooperative Extension System, Auburn University. Posted on April 22, 2014. [Online] http://www.youtube.com/watch?v=hW2bp7g5pkA&feature=share&list=PL7KYGcKptHx_IhC62646

m3QOuLySXQRns&index=2

8. **Majumdar, A.,** M. Powell, and V. Allegri. 2014. How to build a net house for insect pest exclusion. Alabama Cooperative Extension System, Auburn University. Posted on April 21, 2014. [Online] http://www.youtube.com/watch?v=HIvJf8bNXQg&feature=share&list=PL7KYGcKptHx_IhC62646m3QOuLySXQRns&index=1

9. **Majumdar, A.,** V. Allegri, W. Mastin, and J. Miles. 2014. Net house vegetable production: Successes and challenges. Alabama Cooperative Extension System, Auburn University. Posted on April 9, 2014. [Online] http://youtu.be/ZMf_2i5sW3k

10. **Majumdar, A.** 2014. IPM strategies to exclude insects from high tunnels. American Vegetable Grower, sponsored by Dow AgroSciences. [Online] http://www.growingproduce.com/video/crop-protection/ipm/v-ipm-strategies-to-exclude-insects-from-high-tunnels/

1. Extension Websites:

Resource name	Start date	Features	Peak views	Active
Vegetable Entomology, Alabama Coop. Extension System (www.aces.edu/vegetableipm)	2008, upgraded in 2015	Project reports, factsheets insect ID, scouting, IPM Blogs	90 views per day during summer peak	Yes
Alabama IPM Communicator Blog/Website (www.aces.edu/ipmcommunicator)	Launched in 2014		100 views per day	Yes

2. Social Media Usage:

	Channel Name & Link	Start date	Features	Usage Statistics	Active
YouTube Videos	ACES Fresh from the Field	2012	15 IPM and impacts videos	8,500 views (2016); 5,000 views (2015); 2,441 views (2014)	Yes
Facebook	Alabama Vegetable IPM	2010	IPM updates for vegetable growers	623 subscribers	Yes
Facebook	Alabama Ext. Commercial Horticulture	2013	Program updates	400 subscribers	Yes
SlideShare	IPM4Alabama (http://www.slideshare.net/IPM4ALABAMA)	Jan. 2010	37 IPM presentations	60,000 views 70 followers 1500+ downloads	Yes

Date Report is submitted on: December 15, 2016

Project Title: Expanding on-farm training opportunities and services for new/beginning farmers interested in specialty crop production through the Alabama Fruit and Growers Association

Project PI: John Aplin, Former AFVGA President

Report prepared by Dr. Ayanava Majumdar, Technical Advisor to AFVGA Board of Directors and Project Evaluator, Alabama Cooperative Extension System, 115 Extension Hall, Auburn University, Auburn AL 36849.

Activities Performed:

Introduction: The Alabama Fruit and Vegetable Growers Association (AFVGA, new website www.afvga.org) is the largest producer organization serving the needs of the specialty crop producers in the state. The association is very thankful to the funding agency and ADAI for the support provided that has really helped AFVGA meet expectations from farmers and benefit the entire industry.

Project objectives for the grant were:

- Objective 1: Increase adoption of improved fruit and vegetable production techniques through the Annual Conference
- Objective 2: Develop a new website that will be directly beneficial to the producers by allowing better communication and linkages
- Objective 3: Promote the annual conference among new and beginning farmers through promotional materials

Outputs and outcomes for objective 1: Increase adoption of improved fruit and vegetable production techniques through the Annual Conference

AFVGA has evaluation data from the annual conference since 2010. Typically, AFVGA uses a combination of paper-based and web-based evaluation instruments for collecting immediate and delayed feedback. Since the 2016 Annual Conference has just concluded (Nov. 17 and 18), we are providing summary of paper-based feedback collected at the conference that provides a very good indication about the quality of our conference. Below are some highlights from the survey.

- A total of 214 people attended the conference in 2016, with around 40% repeat audience and many new participants (beginning farmers). Number of respondents was 56. Survey response rate was 26%. Participants came from 26 rural counties in Alabama.
- Audience breakdown is as follows: 25% new and beginning farmers, 35% experienced farmers, 10% organic or transitioning producers, 10% naturally grown farmers, 11% urban farms or community gardeners, 2% crop advisors, 10% university-based extension and NRCS/FSA educators.
- There were 12% more new and beginning farmers along in 2016 compared to any other year since 2010. This conference attracted new and beginning farmers because, 1.) We offered new educational sessions geared toward new producers with many out-of-state speakers and field visit to a successful family farm; 2.) Beginning Farmer Networking Session had nearly 19-20 new producers who networked with experienced producers and educators for high impact; 3.) New producers interacted with industry vendors and marketing agencies to learn new information. Overall, the conference had plenty of immediately-useful information for all farmers.
- The major source of information about the annual conference included the new AFVGA website (30%), county extension offices and mailers (21%), AFVGA email newsletters (15%), Alabama

Farmers Federation news releases (12%), and the Alabama IPM Communicator newsletter (9%). In short, the AFVGA website and emails we send out are the critical sources of information that were supported by this grant.

- We had eight educational sessions that consisted of fruit production, vegetable production methods, food safety and buyer audits, pest management, alternative or minor crops, and marketing methods for specialty crops. There were over 20 participants in each session spread over 2 days of conference. 94% respondents were highly satisfied with the conference location (Clanton, AL – a region of heavy fruit and vegetable production in the state) and the number of educational sessions. Over 90% respondents were also very pleased with the technical quality of the meeting and the networking time provided to producers and exhibitors.
- 96% respondents indicated immediate usefulness of field demonstration/tour. About 89% respondents also indicated high usefulness of the educational sessions that were very well attended. We also noted down major points of discussion and future needs of participants during the networking and educational sessions that are available with AFVGA for planning the next conference in 2017.
- Delayed survey question about impacts from the 2016 conference indicated 70% adoption rate for education provided which is excellent. We have on file about 7 impact cases from this year and 10 others provided to us in earlier years. Respondents indicated growing 624 acres of specialty crops that is estimated to be worth $2.6 million. A conservative estimate of the true impact of the conference with all participants is $10 million based on feedback.

Outputs and outcomes for objective 2: Develop a new website that will be directly beneficial to the producers by allowing better communication and linkages

Major outcomes and impacts: We have successfully launched the new website and domain name www.afvga.org (thumbnail on right). Included in the features is the grower locator where members can input their farm information which shares in the Google maps automatically. This new website is also integrated with the social media channels and online registration system for participants. Over 90% participants at the 2016 conference used the new website to enroll and check the agenda resulting in a very high number of hits (2,000+ since launch).

Outputs and outcomes for objective 3: Promote the annual conference among new and beginning farmers through promotional materials

In 2016, we published new bookmarks (2,000 copies) that had updated conference and website information. We also made two AFVGA banners for exhibitions. Bookmarks were circulated free of cost during educational events, other farm exhibitions, and at farmers markets statewide. The new AVFGA website and the social media page on Facebook (thumbnail on the right) have images from the conference and are highly educational for the subscribers who receive free updates from the association regarding farming news/updates and events around the state.

Provide a comparison of actual accomplishments with the goals established for the reporting period.

We have met most of the objectives and goals of the grant. The only remaining activity currently underway are the four regional events that will be organized by AFVGA and Alabama Extension REAs in January 2017.

Present the significant contributions and role of project partners in the project.

- The Alabama Fruit and Vegetable Growers Association is the lead organization for the execution of this project. Established in 1979, AFVGA is one of the largest specialty crop producer organization in the state. AFVGA organizes the Annual Conference and develops educational publications to keep the membership informed.
- AFVGA is partnering with the Alabama Cooperative Extension System (ACES) which is a statewide educational network consisting of Regional Extension Agents, County Extension Coordinators, and Extension Specialists that comprise the Commercial Horticulture Extension Team. ACES personnel serve as technical advisors and provide research-based information that is critical for producers.

Clearly convey progress toward achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.
We have reported all the critical output and outcomes data from the 2016 conference. We have also tried to provide short-term and long-term impact data from most activities. Additional evaluation data is available upon request.

Problems and delays
Note unexpected delays, impediments, and challenges that have been confronted in order to complete the goals for each project. Explain why these changes took place.
We have met most of the objectives of the grant, except #3 which includes organizing regional events. This will be done in Spring 2017 and will benefit the specialty crop producers.

Mention the actions that were taken in order to address these delays, impediments, and challenges.
We have already contacted the Regional Extension Agents and started to plan out meetings for the next year.

Review measurable outcomes to determine if targets are realistic and attainable. An objective that is too stringent should be scaled back and identified in the performance report. Keep in mind that targets may slip due to all kinds of factors, such as employee turn-over and bad weather.

In the event that the work plan timeline, expected measurable outcomes, budget, and/or methodology needs to be adjusted, provide an outline of those changes.

Future Project Plans
Briefly summarize activities performed, targets, and/or performance goals to be achieved during the next reporting period for each project. Whenever possible, describe the work accomplished in both quantitative and qualitative terms.
The only future activity that remains to be done are the few regional events to benefit farmers. We will continue to improve and add to the new website.

Describe any changes that are anticipated in the project.
None

Funding expended to date
Provide information regarding the level of grant funds expended to date.

In the event that a project gained income as a result of planned activities, provide the amount of this supplemental funding and how it will be reinvested.

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Alabama Department of Agriculture and Industries
Mr. Johnny Blackmon
USDA ADAI Project No. 8 FY2013
Final Report
12/20/16

Final Report
December 22, 2016

I. **Project Title:** Plasticulture Equipment for Cullman County Citizens

II. **Project Summary:** The purpose of this project was to ensure that all Cullman County producers have the best chance of marketing quality produce. The local farmers market had opened up to growers from other counties making it tougher for Cullman producers to sell their fruits and vegetables. Plasticulture has become the most efficient way for producers, large and small, to grow their produce. Several farmers have seen the benefits and purchased plastic laying equipment, but they were many who do not own the equipment because of the of the cost related to the amount they are producing. Many farmers were aware of the benefits such as controlling the amount of water, suppression of pests and being allowed to place fertilizer where it is needed and not thrown on top of the ground where it is hoped that it is taken in by the plant and not washed away. Growing on plastic allows the farmer to till the soil, lay the plastic and seed grass in the middles eliminating all concerns of soil erosion. Extended growing seasons was another advantage of growing fruits and vegetables on plastic. The plastic raises the soil temperature allowing crops to be planted earlier or sustained longer when temperatures begin to drop in the fall allowing the producer to have produce when others, not growing on plastic, no longer have anything to sell. The plan for the grant money was to purchase a plastic bedder and layer along with a planter for plastic and lifter to remove used plastic so the ground can be used again. The equipment is kept and maintained at the Soil and Water Conservation office; Cullman County producers call in and schedule it for a set amount of time with a small monetary fee which in turn is used for upkeep and maintenance. Farmers are responsible for providing their own plastic mulch and drip line and other supplies needed.

III. **Project Approach:** The first step upon being awarded the grant was to purchase the equipment and have custom trailers built to transport the equipment from farm to farm. When the equipment and trailers both arrived the Cullman Conservation District begin to make the citizens of Cullman County aware that this program had started by first conducting a platiculture workshop. The workshop started with half a day of classroom presentations presented by the Alabama Cooperative Extension Service about crops that work well with a plastic mulch system and how to manage the system. Then participants went outside where the equipment was used in an outdoor field day, so all in attendance could see how the equipment worked. Rentals began shortly after the workshop for spring crops. The equipment was continuously advertised in local newspaper and the Cullman Conservation District's quarterly newsletter. The equipment was also displayed at agriculture meetings in the county such as the annual farmer's market kick off meeting.

IV. **Goals and Outcomes Achieved:** Beginning in the first year the equipment was leased to six different farmers and used on forty-eight acres. In the second year six users again used the equipment, with two of them being new to the program. Forty-five was the acre count for that year. The two farmers from the previous year that did not participate the second had seen such great benefits from the equipment that they purchased equipment for their operations to be able to use plastic mulch on a larger scale. In this final year, more in the county began to hear of the benefits and how the program worked that fourteen farms used the equipment, nine of them being first time users and covered fifty-three acres. The amount of yield increase by far exceeded expectations on certain crops. Watermelon producers reported to the District as much as five times the yield while decreasing herbicide use for weed control. Other crops seen significant yield increased but not to the extent of watermelons. Money generated from the equipment has been use to maintain the equipment such as replacing bearing, repairs and keep equipment lubricated. Also keeping quality tires on the transportation trailers and the equipment.

V. **Beneficiaries:** The Cullman County farmers greatly benefited from this project. They are able to lease equipment rather than purchase equipment that would either be a great financial burden on their farm or chose not to use plastic mulch and obtain the benefits the system offers. Producers in the county that use the equipment are able to produce better yields and higher quality produce to carry to market while lowering the input cost of herbicides and fertilizer.

VI. **Lessons Learned:** The benefits of this program by far exceed any of the negatives. The hardest part of this project is something that really cannot be controlled but has to be worked around. When a farmer schedules the equipment and weather causes a delay and another farmer has it reserved for the following day, we just have to talk to both involved and work out a schedule that fits both the best possible. So far we have not had any situation that has put any farmer at a disadvantage. All of the goals set have been achieved and many were exceeded.

VII. **Contact Person**

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tkress@cullmansw

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State Department of Agriculture: ALABAMA DEPARTMENT OF AGRICULTURE & INDUSTRIES
State Point of Contact: HASSEY BROOKS AND JOHNNY BLACKMON
Reporting Period: September 30, 2013 – September 29, 2016
USDA AMS Agreement Number: 12-25-B-1652 Project # 7
Type of Report: Final Performance Report
Date Report is Submitted: 31 October 2016
Report Submitted by (Sub Grantee):

Jill Goode Englett
Instructor, Department of Human Environmental Sciences
University of North Alabama
Florence, AL 35632

Project Title

From Culinary Tower to Community Table – Increasing the growth & consumption of local produce through aeroponic gardening.

Project Summary

Background and Motivation
From Culinary Tower to Community Table – Increasing the growth & consumption of local produce through aeroponic gardening (FCTCT) was designed to:

- Develop the premier aeroponic garden and greenhouse in Alabama, increasing the awareness of a sustainable method of growing specialty crops. Aeroponic gardening requires no soil and grows specialty crops vertically allowing for the growth of forty-four specialty crop plants in a 2 ½ square foot space. Specialty crops mature at a faster rate and provide a higher yield while using five to ten percent of the water needed in traditional farming methods when grown aeroponically. Aeroponic gardening allows water and nutrient recycling and increases the ability to grow specialty crops locally reducing the carbon footprint.
- Provided a primary aeroponic education center for local growers, hobby gardeners, individuals, restaurateurs, future culinary professionals and university students. According to a study published in the American Journal of Public Health people tend to consume more fresh fruits and vegetables if they grow them. Clemson Cooperative Extension office reports that fruits and vegetables purchased locally provide more nutritional value and better taste while improving the local economy and decreasing pollution. Aeroponic gardening will allow for the increased production of specially crops locally.
- Increase the farm to table education and experience of culinary students.
- Research methods on increasing vegetables consumption among the college population. Two out of every three Americans are overweight or obese, while less than 4% of college students consume 5 servings of fruits and vegetables a day. There are several health consequences associated with being overweight or obese, while increased fruit and vegetable intake are linked to health promotion, weight management, and disease prevention. College students are at an impressionable time in their lives, a time when they develop lifelong dietary and eating habits. One of the Healthy Campus 2020 goals is to impress upon college students the importance of lifelong consumption of the recommended servings of fruits and vegetables. A specific Healthy Campus 2020 goal is to increase the proportion of students who eat 5 servings of fruits and vegetables a day by 10 percent. Research to discover effective methods of increasing fruit and vegetable intake in this population can help find ways to accomplish this goal. A portion of the specialty crops grown will be used to research ways to increase fruit and vegetable intake among college students.

- Aid in feeding the food insecure of Northwest Alabama. Over 17% of households in Alabama experience food insecurity. Many of these families rely on soup kitchens and community meal programs for food. Often these programs are unable to provide adequate fruit and vegetables to their clients. The FCTCT program would provide a community meal program with at least 30% of the crops grown to serve to or send home with their clients.

Previous Funding
This is a new project and has not been previously funded by a SCBGP or SCBGP-FB.

Project Approach

Getting the towers up and running:

December 2013:
After receiving the grant, the Human Environmental Sciences Department (HES) at the University of North Alabama (UNA) co-sponsored with the grant PI, Jill Englett, allowing her to attend a three-day training program at an Aeroponic Greenhouse in Florida and also visit and tour a second Aeroponic Greenhouse in Florida. This training provided insight on appropriate growth methods including which plants grow best in the Aeroponic towers, seeding rockwool, transplanting seedlings to towers and harvesting. Aeroponic tower management including maintenance, cleaning and nutrient management were also included in the training. This training was beneficial in the PI's ability to educate students and the community on Aeroponic gardening and in the success of the UNA Aeroponic garden.

March 2014:
Shotcrete of America, LLC, a local gunite company owned by Paul Haralson, donated and laid the concrete floor for the tower garden greenhouse. This was planned for November 2013, however due to an unusually cold winter and Shotcrete's schedule it could not be laid until March 2014.

April 2014:
UNA facilities management began laying the knee wall for the greenhouse. Due to the height of the towers (8 feet) the greenhouse kit purchased by UNA was too short to house the Aeroponic towers without a knee wall. This is information that will be shared when educating the community on Aeroponic growing. The greenhouse was completed by fall 2014. We started growing outside in the towers in May. We learned that starting the assembly of a greenhouse in the middle of winter was not the best timing and in the future would adjust grant proposal timelines to start the growth season in the Spring unless the greenhouse facility was available at the time of the grant application.

May 2014:
UNA facilities helped the grant supported student worker and PI assemble the towers and set them up to begin growing. We started seeding rockwool on May 4th and transplanted seedlings to the towers on May 12th. Our first tower was harvested on May 30th, less than 24 days from seed to mature plants for the Asian Greens. This provided us with a good timeline for growth and educational material for the community classes.

College Course on Aeroponic Towers:

Summer 2014 and Summer 2015
HES 497 Special Topic in Aeroponic Gardening
Learning Objectives:

- Develop a knowledge of how to grow vegetables vertically without any soil
- Select appropriate vegetables to plant in Aeroponic towers
- Plant and grow seedlings for transplant to Aeroponic towers

- Maintain and grow vegetables in Aeroponic towers
- Sample vegetables grown in Aeroponic towers
- Harvest vegetables
- Distribute vegetables to local soup kitchens
- Summer 2014 – In collaboration with Grant PI, Grant student worker, the Lauderdale County Cooperative Extension Agency and local guest chef develop and advertise a 5-week community nutrition course on Aeroponic tower gardening
- Summer 2015 – Write a 5-page paper and develop a presentation on Aeroponic gardening

Favorable and Unusual Development:

- Students were very enthusiastic about growing and trying plants.
- Students took pride in the plants they grew.
- The summer heat increased the rate of water evaporation from the towers and larger plants drained the tower faster. We lost the plants in two towers when towers dried out unexpectedly.
- Megacopta cribraria (kudzu bugs) made an unexpected appearance in the Summer of 2014. Our cooperative extension agent helped us identify this and made treatment suggestions. Pest management was added to the curriculum.
- Wasps are attracted to the water and will set up in greens like lettuces and arugula if they get too thick, we learned to wear gloves when harvesting thicker foliage and watch for wasps.
- Students learned to interact and educate the public.

Community Education on Aeroponic Towers:

Food Bloggers visit Aeroponic Towers

June 9, 2014

Three food bloggers visited the UNA Culinary facility for the day. They were educated on the Aeroponic towers and helped with the first major food harvest. They also worked with Chef Yuille to prepare and sample the foods from the harvest and blog about the UNA Aeroponic Towers.

5-Week Community Education Course

June and July 2014 – Collaboration between grant PI, Jill Englett, grant student worker, Emily Hood, HES 497 Special Topics in Aeroponic Gardening and the Lauderdale County Extension Office to provide a free 5-week community education course:

Session 1: June 19th—Introduction of an aeroponic garden: How does it work? —Jill Englett, Emily Hood and Special Topics students

Session 2: June 26th—Pest Control/Learning which plants grow best in each season to keep you planting throughout the year—Chris Becker (County Extension Agent)

Session 3: July 10th—Build your own system/Utilization of Rain Barrels—Jill Englett, Emily Hood, Special Topics Students and Christ Becker (County Extension Agent)

Session 4: July 17th—Preservation of excess Produce— Lelia Wissert (County Extension Agent)

Session 5: July 24th—Cooking Demonstration—Guest Chef Einar Gudmundsson, Special Topics Students

Ninety-six people registered for the course and a total of 70 people attended at least one session:

Session 1: 63 participants

Session 2: 38 participants

Session 3: 29 participants

Session 4: 16 participants

Session 5: 16 participants

Course evaluations received excellent to good marks and demonstrated increased knowledge on Aeroponic gardening among the participants.

Favorable and Unusual Development:

- We chose to do a 5-week course to allow the participants to plant and then harvest what they planted, in retrospect we lost several participants each week. Five-weeks appears to be too long to expect repeated participation during the summer months.
- The pest control section was too long for many participants and needed to be more basic.
- By the time you purchase supplies and experiment with building a homemade Aeroponic system it is actually cheaper and more efficient to purchase a consumer version of the Aeroponic towers.

Community Class – Growing a Tower Garden Inside & Out

February 21, 2015 – Jill Englett, PI

Four-hour class on Aeroponic tower gardens and greenhouse tour with 14 participants.

Valley Garden Club

Fall 2015

Provided luncheon education session and Aeroponic tower garden and greenhouse tour for 24 garden club members. Lunch was prepared by culinary students and included vegetables grown in the Aeroponic towers.

Culinary Students use of Aeroponic Towers:

Culinary chefs and students were encouraged to utilize the produce from the tower gardens in culinary classes and special events:

- Aeroponic tower garden vegetables were used in some classes, especially by students when they were doing cooking challenges that limited many of their options to on-hand items.
- Aeroponic tower garden vegetables were often used when there were special culinary functions and farm-to-table events.

The primary PI is an instructor of nutrition and not directly involved in the culinary classes which limited record keeping. For future grants better communication is needed between the culinary chefs and the primary PI. Additionally, ways to increase the chef's communication about upcoming events and class experiences in advance so the items needed can be grown in the towers can be helpful.

Chef Prema Monteiro, Co-PI visited the following culinary programs and educated them on the UNA Aeroponic tower garden as part of her visit:

- March 13, 2015 – Allen Thornton Career Technical School
- April 17, 2015 – Deshler High School
- April 20, 2015 – Allen Thornton Career Technical School
- April 24, 2015 – Allen Thornton Career Technical School

Favorable and Unusual Development:

- Students appeared to enjoy using vegetables from the Aeroponic towers when questioned by the PI.
- Communication between the chefs and the PI concerning what needs to be grown when could improve. Communication was attempted at the beginning of each semester, however the class plans did not appear to be available far enough in advance, especially if the labs were student planned, to grow the needed items.

Aid in Feeding the Food Insecure:

During times when Aeroponic towers were growing well regular donations were made to a variety of local soup kitchens by Co-PI, Chef Yuille and HES Special Topic Students:

Shepard's Table at the Florence United Methodist Church

First Presbyterian Church of Florence Weekly Soup Kitchen

Trinity Episcopal in Florence Soup Kitchen

Lions Pride Pantry – the UNA food pantry

Safe Place – Domestic Violence Shelter

Foods donated included: Arugula, spinach, a variety of lettuces, basil, cilantro, okra, peppers, cucumber and eggplant and where often over half of our harvest since the Culinary program used less than anticipated from the Aeroponic tower garden.

Favorable and Unusual Development:

- At least twice a year we have to take the Aeroponic towers out of service for cleaning and due to limited time of the PI this process has the towers down for about 4 weeks.
- During our first winter growth we discovered that foods grew much slower. Adding an additional space heater and/or tank heaters increased growth rate.
- The summer of 2016 we had very limited growth. After researching the issue, we discovered that due to the unusually high temperatures in this area, the temperature of the water tanks was too high and this effected the nutrient and acid/base balance. In the future we will have to figure out how to wrap the tanks (tower bases) to limit heat absorption.

Research on Increasing Vegetables Consumption Among the College Population:

Spring 2016

In-class vegetable tasting experiences were conducted to evaluate if this increased the overall vegetable consumption of students in an introductory nutrition course:

The outcome of the research is a manuscript entitled *Impact of Vegetable Exposure-Garden Grown Intervention (VEGGI) on Vegetable Consumption of Undergraduate Students* which will be submitted for publication in November 2016.

Favorable and Unusual Development:

- Students did not significantly increase their vegetable intake over the course of the semester.
- Future steps to improve the research effort include:
    - Increase number of participants
    - Increase student engagement
    - Visit tower garden
    - Encourage students to volunteer at the tower garden
    - Increase interaction in vegetable exposure
    - Increase number of interventions
    - Increase variety of vegetables
    - Partner with campus dining serves
    - Add in-class vegetable preparation
    - Assess pre- and post- study readiness for change

Other Uses of Aeroponic Tower Garden Vegetables

Senior Citizen Center Education

June – November 2015 – Lewis Yuille, Co-PI

One Thursday a month Chef Yuille taught a healthy eating and cooking class for the Senior Citizens Center of Muscle Shoals utilizing produce from the Aeroponic towers.

Nursery School Tasting Experience

Summer 2016 – Grant Student Worker

Provided a local nursery school weekly vegetable tasting experiences to encourage increased vegetable consumption and self-efficacy among this population.

Goals and Outcomes Achieved

Education

5-Week Community Education Course:

Collaboration between grant PI, Jill Englett, grant student worker, Emily Hood, HES 497 Special Topic in Aeroponic Gardening and the Lauderdale County Extension Office to provide a free 5-week community education course:

Session 1: June 19th—Introduction of an aeroponic garden: How does it work? —Jill Englett, Emily Hood and Special Topics students

Session 2: June 26th—Pest Control/Learning which plants grow best in each season to keep you planting throughout the year—Chris Becker (County Extension Agent)

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Session 5: July 24th—Cooking Demonstration—Guest Chef Einar Gudmundsson, Special Topics Students

Ninety-six people registered for the course and a total of 70 people attended at least one session:

Session 1: 63 participants
Session 2: 38 participants
Session 3: 29 participants
Session 4: 16 participants
Session 5: 16 participants

Following education workshops, participants and/or students will be able to:

1. Demonstrate feasibility of Aeroponic gardening as a method of growing specialty crops
   Participants in the 5-Week Community Education Course planted and harvested the Aeroponic towers and learned about the feasibility of Aeroponic gardening.
2. Identify at least two economic advantages to Aeroponic gardening
   All students who participated in the 5-Week Community Education Course and completed the final evaluation where able to correctly identify two economic advantages to Aeroponic gardening.
3. Identify at least two environmental advantages to Aeroponic gardening
   All students who participated in the 5-Week Community Education Course and completed the final evaluation where able to correctly identify two environmental advantages to Aeroponic gardening.

Culinary Students and Culinary Programs in Alabama, as part of regular recruiting visit by Chef Prema Monteiro, Co-PI, were educated on the UNA Aeroponic tower garden using a presentation developed by PI Jill Englett that included information on the advantages of including an Aeroponic tower garden as part of the culinary program.

- March 13, 2015 – Allen Thornton Career Technical School
- April 17, 2015 – Deshler High School
- April 20, 2015 – Allen Thornton Career Technical School
- April 24, 2015 – Allen Thornton Career Technical School

Community

During times when Aeroponic towers were growing well regular donations were made to a variety of local soup kitchens by Co-PI, Chef Yuille and HES Special Topic Students:

Shepard's Table at the Florence United Methodist Church
First Presbyterian Church of Florence Weekly Soup Kitchen
Trinity Episcopal in Florence Soup Kitchen
Lions Pride Pantry – the UNA food pantry
Safe Place – Domestic Violence Shelter

Foods donated included: Arugula, spinach, a variety of lettuces, basil, cilantro, okra, peppers, cucumber and eggplant and where often over half of our harvest since the Culinary program used less than anticipated from the Aeroponic tower garden.

Research

Spring 2016

Six in-class vegetable tasting experiences were conducted, using vegetables from the Aeroponic tower garden, to evaluate if this increased the overall vegetable consumption of students in an introductory nutrition course.

The outcome of the research is a manuscript entitled *Impact of Vegetable Exposure-Garden Grown Intervention (VEGGI) on Vegetable Consumption of Undergraduate Students* which will be submitted for publication in November 2016.

Beneficiaries

UNA Culinary arts program has access to fresh grown vegetables during the semester to use as part of their labs, which if utilized to the fullest extent could potentially lower food cost by approximately $400 per semester. Especially when making items like pesto that require large quantities of basil. Additionally, students are able to produce items like pesto in their classes because they have access to adequate quantities of these herbs.

Local soup kitchens and domestic violence shelters are able to provide fresh produce to their participants which would be cost prohibitive.

In-class vegetable tasting experience, which would otherwise be cost prohibitive with classes of 30-40 students are possible with the vegetables from the Aeroponic gardens.

The availability of vegetables grown in the Aeroponic towers increased our ability to provide community education classes, such as the senior citizen classes.

Lessons Learned

Soup kitchen organizers and participants appreciate the availability of fresh produce and are willing to utilize what is provided.

Our local culinary students have limited interest in growing and harvesting vegetables and herbs for their classes, however if the vegetables are harvested for them they are very willing to utilize them.

Students appear to enjoy the opportunity to try vegetables in the class room, however in-class vegetable tasting experiences had limited short-term impact on student's vegetable consumption. Adding readiness to changes evaluations to the research might increase outcome data.

Aeroponic growing techniques are easier to maintain and less time intensive than dirt growing and therefore easier to incorporate in a college program.

Root vegetables cannot be grown in the Aeroponic towers and this limits the variety of vegetable growth.

Greens such as salad greens, arugula and spinach grow best in the greenhouse due to limited space, while cucumbers and eggplant grow best when the Aeroponic towers are outside.

Contact Person

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Additional Information

A manuscript entitled *Impact of Vegetable Exposure-Garden Grown Intervention (VEGGI) on Vegetable Consumption of Undergraduate Students* which will be submitted for publication in November 2016.

Name of State Department of Agriculture:
Alabama Department of Agriculture and Industries

Name of State Point of Contact:
Johnny Blackmon

USDA AMS Agreement Number:
12-25-B-1652

Type of Report: Final Report

Date Report Submitted: October 28, 2016

Volunteers of America Southeast

Community Gardens: Growing Our Community Through Shared Gardens"

PROJECT SUMMARY

☐ **Provide a background for the initial purpose of the project, which includes the specific issue, problem or need that was addressed by this project.**

☐ **Establish the motivation for this project by presenting the importance and timeliness of the project.**

Research has pointed to the overall benefit of community gardens. A recent study in Michigan showed that on average, respondents with a household member who participated in a community garden consumed fruits and vegetables 4.4 times per day, as compared to 3.3 times for respondents without a gardening household member. Of respondents from gardening households, 32.4% consumed fruits and vegetables on average at least 5 times daily, as compared to 17.8% for those with non-gardening household members.

The purpose of the Community Gardens program is to bring low income and often high crime neighborhoods together for a consolidated purpose of providing fresh fruits and vegetables to residents who otherwise would not be able to afford them. The garden will reduce family food budgets while producing nutritious food. The neighborhoods targeted for this program are Alabama Village, Creighton, and Mobile Terrace. Others may be added as green space is identified. We know from research that some other benefits of community gardens include:

- Improves the quality of life for people in the garden
- Provides a catalyst for neighborhood and community development
- Stimulates Social Interaction
- Encourages Self-Reliance
- Creates opportunity for recreation, exercise, therapy, and education
- Reduces Crime
- Creates income opportunities and economic development
- Provides opportunities for intergenerational and cross-cultural connections

The relatable purpose of the program is to benefit low income residents in targeted communities learn how to cultivate specialty crops in their neighborhoods to increase the number of community growers and overall consumption of healthy foods.

PROJECT APPROACH

- **Briefly summarize activities performed and tasks performed during the grant period.**

1. Five garden sites were secured through partnerships and agreements during the first months of the program.
2. Bids were taken and equipment purchased for the project.
3. Training was provided for teachers at Light of the Village Youth and Children program.
4. Garden was constructed at Eagle's Landing.
5. New garden sites were sought and secured.

- **Present the significant contributions and role of project partners in the project.**

The partnership with the Alabama Department of Agriculture and Industries is a critical one and we have established an excellent working relationship. Volunteers of America provided access to both property and volunteers. Fiskars proved to be an excellent partner building a state of the art garden for the homeless veterans program at Eagle's Landing.
And Light of the Village Youth and Children's program gave us access to many families in the community.

GOALS AND OUTCOMES ACHIEVED

☐ **Include activities that were completed in order to achieve the performance goals and measurable outcomes for the project.**
☐ **If outcome measures were long term, summarize the progress that has been made towards achievement**
☐ **Provide a comparison of actual accomplishments with the goals established for the reporting period.**
Expected Measurable Outcomes

Goal 1: Partnerships will be developed with local Cooperative Extension Services Office, Mobile Botanical Gardens Staff, three local churches, three Community Organizations, two schools, and Eagle's Landing Transitional Housing Program for Homeless Veterans resulting in a minimum of 50 households actively:
a. receiving nutritional education.
b. consuming more healthy foods.
c. taking an active part in building a stronger community as measured by:
1. the number of participants in the classes,
2. number working in and utilizing the gardens
3. a survey of the participants as to the value of the program

Outcome 1

1. Each year for the three years of the grant period, garden sites were secured and planted at Stanton Road, Eagle's Landing (6501 Moffett Road), VOA Community Enrichment Center (6500 Zeigler Road) in Mobile, Light of the Village in Prichard, and Group Home, owned in Satsuma, AL for individuals with intellectual disabilities.
2. A garden was planted at Chickasaw High School during the second and third years of the grant period.
3. Each year over 180 children from over 150 households participated in gardening class
   through our summer children's program.
   A. They planted seeds to take home for replanting
   B. Were given information on:
      1. How to plant a garden in a small space.
      2. What plants grow well in our area.
      3. Guide for healthy eating.
4. Partnered with Victory Teaching Gardens
   A. Volunteers of America furnished materials for rebuilding a classroom for the Victory Teaching Garden.
   B. Darrell Spencer provided the tractor and equipment to prepare grounds for planting.
5. Fiskars selected Volunteers of America out of over 600 applications in the U.S. to do a garden build at the Eagle's Landing site on Moffett Road.
   A Over 100 volunteers took part in the planting.
   B. Twenty-four residents of the Transitional Housing program for veterans are partaking of the food from the garden.
6. Thirty-eight residents of the Transitional Housing program for veterans (Eagle's Landing) are working in the garden at that site each year.
   A. The food is utilized by the veterans for their meals.
   B. The veterans receive information on healthily eating.

Goal 2: Provide 3 community garden sites in targeted neighborhoods measured by identification and commitment letters to formalize the dedication of the site for a continuation of the garden by community members for a minimum of three years.

Outcome 2

Gardens located at Stanton Road, Eagle's Landing (6501 Moffett Road), VOA Community Enrichment Center (6500 Zeigler Road) in Mobile, Light of the Village in Prichard continued the three years of the grant and will continue to serve as community gardens into the future. The garden and partnership with Chickasaw High School will also continue.

Goal 3: Acquire machinery needed to prepare land as evidenced by purchase and/or rental of tractor, medium duty rotary tiller, cultivator, sprayer, spreader, planter, disk harrow, and bedder resulting in a secure means of developing, planting, and cultivating community gardens.

Outcome 3

All machinery was secures and remains in use for all of the community gardens.

Goal 4: Work with County Extension Service to provide education and training to assist community members in planting and cultivating specialty crops of fruits and vegetables over a 12 month period as well as educational opportunities for preparation and use of healthy foods.

1. Three teams of gardening crews will be enlisted and trained in best practices for selection of crops to be planted, planting, and cultivating crops.
2. Thirty individuals will attend training classes focused on the benefits of gardening and healthy foods.

a. Resulting in a 10% increase in knowledge based on pre and post test administered at the training events.

b. Resulting in 75% of attendees participating in the community garden project.

Outcome 4

1. Two teams of gardening crews were enlisted for Eagle's Landing and two instructors were trained at Light of the Village for teaching children in the Summer Children's programs.
2. Training in the benefits of gardening and healthy foods was offered through partnership with Chickasaw School, Victory Teaching Garden and Light of the Village Summer Program.
3. Pre and posttest were not administered.

Goal 5: Ten families will be trained in how to utilize small space gardens in their yards, with 70% creating, planting, and harvesting in their personal garden.

Outcome 5

Twenty-eight children participating in the Summer Camp gardening/healthy food classes reported their family planting home gardens.

BENEFICIARIES

- **Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments**

The groups that benefited from this project include:

A. The veterans at Eagle's Landing who enjoy fresh fruits and vegetables year round from the garden located at that facility.
B. The residents of a group home who enjoy fresh fruits and vegetables year round from their garden.
C. The groups and individuals that have been assisted by Darrell Spencer assisting them with their gardening projects.
D. The children who have adjusted their eating habits as a result of information and training about nutrition and healthy eating.

- **Clearly state the quantitative data that concerns the beneficiaries affected by the project's accomplishments and/or potential economic impact of the project.**

The quantitative data concerning the beneficiaries of this project would include:

1. The Over 200 households who received healthy food from the gardens used in this project.
2. The 180 children who received training and information about nutrition an healthy eating.
3. The additional groups who have received help by Darrell Spencer using his tractor and the equipment purchased through this grant to plant their community gardens.

The economic impact of this project is difficult to measure but the food produced and utilized from the community gardens benefited the budgets of participating families.

LESSONS LEARNED

- **Offer insights into the lessons learned by the project staff as a result of completing this project.**

We learned that a profitable means of introducing families to the idea of growing their own garden is through their children. The Summer Programs for children proved to be an excellent way to take the idea of gardening and healthy eating into homes.

- **Provide unexpected outcomes or results that were an effect of implementing this project.**

The unexpected outcome of this project was the number of individuals and groups seeking assistance in developing their community garden. As a result of the requests, Darrell Spencer has and continues to use his tractor and the equipment provided through this grant to assist other individuals and groups in planning and developing community gardens.

- **If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.**

The goals and outcomes of this project were met with the exception of administering a pre and posttest to measure an increase in knowledge of foods and gardening.

CONCACT PERSON

☐ **Name of Contact Person for the Project**

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ADDITIONAL INFORMATION

☐ **Provide additional information available that is not applicable to any of the prior sections.**

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Alabama Department of Agriculture and Industries

Mr. Johnny Blackmon

USDA ADAI Project No. 16SCBGPAL0004

Final Report

April 18, 2017

I. **Project Title:** Homewood City School Community Garden and Outdoor Classroom

II. **Project Summary:** This grant is used to increase the consumption of specialty crops in our school system and community. In the city of Homewood, 42 % of the students live in apartment complexes and 28% receive free/reduced lunch. This population does not have access to the many benefits of fresh fruits and vegetables. By planting on the school grounds we have exposed the students as well as the community to specialty crops they were not accustomed to.

We are creating a sustainable model for what a school system and a community can do when working together and sharing resources. Increasing the consumption of specialty crops has a positive impact on our community as a whole. We have used the Centers For Disease Control health and wellness survey to gauge the number of students eating five or more fresh fruits and vegetables a day. When we started, we found that it was only 14%. We have now raised that percentage to 15.1%. Our community garden has grown and we now maintain/lease twenty raised beds to local families. These beds have are consistently leased and we keep a wait list to rotate people into the garden. During the summer we use the outdoor classroom to host a "Seed to Plate" class and that has had a terrific response. This year two of our science teachers will lead the classes. This has a great benefit in getting families to engage in the garden that might not normally do so. We have also been lucky to have five garden towers at each of the schools in the system. By doing this, we are teaching elementary age students how to grow produce in a small area and the graduating them to the large outdoor classroom. Having specialty crops at every level of our school system and in the community garden, people have grown to expect this to be the backdrop of their everyday life. It is now the norm and not the exception.

III. **Project Approach:** Our goal with this grant has been sustainability. We began with teacher planning and team building. From previous grants we have a strong framework in place and now we are working on sustaining the momentum with the students and the neighborhood. All of our community beds are irrigated through rainwater harvesting. This system was getting old and in need of repair. One of our Boy Scout Troops that partners with us helped out with the repairs. We also started plants from seed that was donated from a local nursery. We started a variety of herbs and then shared them with all of the schools and planted them in the raised beds as well as the garden towers. Our students with special needs continue to play a big part in all of our growing endeavors. I now have students with special needs planting, maintaining and harvesting from age five to twenty. This population in particular often suffers from poor eating habits and starting with them so young we are already seeing a difference. The drought dealt us quite a blow but with the help of a local nursery and a local landscaper we were able to plant a variety of fruit trees and they are all still alive! This was not an easy thing to do under such extreme conditions. Without the by in from the community we could not of pulled it off.

IV. **Goals and Outcomes Achieved:** Our goal to increase the consumption of specialty fruits and vegetables has been measured by our survey. We increased the number of students in our 6th and 7th grade from 14% to 15.1%. This is not as much as we had hoped but we were still pleased to see an increase. We had set an initial goal of growing twenty pounds of fresh produce and we quickly met that goal. We have now adjusted that goal to sixty pounds and feel like with a successful summer we can do it. We have had no problem keeping the twenty community beds leased but do not feel like it would be a good idea to add more at this time. Our cistern does alright collecting enough water for the twenty beds but we believe adding more would cause a strain. We are currently growing fresh produce in five garden towers at the elementary and high school sites. These are doing well and provide good exposure. The tasting labs continue to be very popular with all of the student body and will continue those till the end of the school year.

V. **Beneficiaries:** The students, teachers and administrators of Homewood City Schools have benefited greatly from this project but also the neighbors and community at large. We have several local boy and girl scout groups that work and meet in the garden and that has helped turn the garden into a central hub for the neighborhood. We now have a farmer that regularly sets up in a parking lot close by and sells fresh produce every Wednesday. The garden has started a ball rolling that helped get lots of people on board with eating more local produce.

VI. **Lessons Learned:** This grant has been very beneficial in helping us continue with our goals and not drop the ball. It has been much easier to involve the community than the schoolteachers. The students want to be in the garden but we need to figure out a way that is more appealing to the schoolteachers. The exception to this is our teachers who teach special ed. They are in

the garden working and harvesting all the time. Another very valuable lesson has been developing strong working relationships with businesses in the community. The drought could of really set us back but with the help of a local landscapers watering truck we were saved. We continue to do a great job of exposing folks to a variety of specialty fruits and vegetables and I would still like to do a better job of increasing consumption with our kids.

VII. Contact Person

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Developing a Statewide Organic and Small Vegetable Pest Management Educational Campaign for Specialty Crop

Alabama Department of Agriculture and Industries
c/o Johnny Blackmon
Final Report
March 1, 2017

Developing a Statewide Organic and Small Farm Vegetable Pest Management Educational Campaign for Specialty Crop Producers

PROJECT SUMMARY

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This proposal was one of the earliest attempts in the state of Alabama to establish an integrated pest management (IPM) program for helping small farms who were losing 50% or more crop to insect pests. Due to popular public demand and producer interest, the grant objectives aimed at

generating new knowledge and provide support to organic producers that resulted in a highly impactful statewide educational campaign (described below). Specific objectives were as follows:

1) Demonstrate the effectiveness of trap crops in tomato and squash/watermelon production

2) Demonstrate the effectiveness of mechanical pest management practices in vegetable production

3) Demonstrate the effectiveness of approved organic insecticides and tank mixes

4) Intensive grower education through field and hands-on training

5) Training of Regional Extension Agents (REAs) to expand the statewide organic campaign

Thus, this grant provided support not only to the producers but also to the educators who had never experienced organic pest management practices on demonstration or practical usage. In short, this funding supported a very strong capacity-building effort supported with instructional materials, publications, and websites.

☐ Establish the motivation for this project by presenting the importance and timeliness of the

project.

Following were the main motivating factors for this grant:

- Lack of an integrated pest management program for specialty crop producers
- Increasing demand for alternative pest management strategies from farmers experiencing 50% or more crop loss without training and knowledge
- Lack of educational infrastructure to assist Extension educators to provide active consultation to organic small farms. Educators had to be convinced regarding the effectiveness of trap crops, pest exclusion systems, and organic insecticides so that they can train producers.

☐ If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this

project complimented and enhanced previously completed work.

This was the first SCBGP grant that helped establish the statewide organic pest management campaign that benefited hundreds of producers and saved millions of dollars of crops during and after the life of the grant (impact statements below).

PROJECT APPROACH

☐

Project outputs during 2013, 2014, and 2015 calendar years supported by this grant.

Objectives 1, 2, 3: Various IPM technology demonstrations

- Number of IPM research and demonstration locations = 10 (equivalent to 20-25 acres of vegetables)
- Direct on-farm consultation service = 25 per year, in conjunction with extension agents

Objective 4: Intensive grower education and resource development

- Number of short IPM presentations = 37 (total participants = 1,051)
- Number of IPM workshops = 35 (total participants = 1,463)
- Number of field days/demonstrations = 12 (total participants = 483)
- Number of large exhibitions at grower conferences = 11 (direct contacts = 567)
- Publications: Handbooks = 5, educational posters = 2, Extension bulletins = 10, IPM newsletter issues = 45, magazine articles = 10, news releases = 15, YouTube educational videos = 10, all publications and videos are available on the Alabama Vegetable IPM website (www.aces.edu/vegetableipm) that gets nearly 90 views per day during summer season or pest outbreaks.
- Growth in IPM newsletter subscriptions: 1,300 in 2013 to 2,040 in 2015 (56% increase), all blogs are

available at www.aces.edu/ipmcommunicator

- Social media engagement: 266 subscribers in 2013 to 770 at present (nearly 3 times increase in three years)

Objective 5: Extension agent training/capacity building

- Number of in-service training for regional extension agents and county extension coordinators

☐ Present the significant contributions and role of project partners in the project.
The Alabama Cooperative Extension System consists of Auburn University and Alabama A&M University. We will collaborate with Tuskegee University Cooperative Extension Program to support Extension Agent and producer training in the Black Belt of AL. The Alabama Fruit and Vegetable Growers Association and the Alabama Sustainable Agriculture Network will be collaborators in project implementation by organizing additional statewide meetings and publicizing this project through publications (electronic and print formats). Other partner organizations include NRCS, Southern Sustainable Agriculture Working Group, Federation of Southern Cooperatives, and the Food Banks of North Alabama.

☐ Present the significant contributions and role of project partners in the project.
The Alabama Cooperative Extension System consists of Auburn University and Alabama A&M University. We will collaborate with Tuskegee University Cooperative Extension Program to support Extension Agent and producer training in the Black Belt of AL. The Alabama Fruit and Vegetable Growers Association and the Alabama Sustainable Agriculture Network will be collaborators in project implementation by organizing additional statewide meetings and publicizing this project through publications (electronic and print formats). Other partner organizations include NRCS, Southern Sustainable Agriculture Working Group, Federation of Southern Cooperatives, and the Food Banks of North Alabama.

GOALS AND OUTCOMES ACHIEVED

☐ Include the activities that were completed in order to achieve the performance goals and measurable outcomes for the project.

Baseline data:

- Organic IPM project for vegetable producers did not exist prior to 2010-2011. The average use of IPM tactics was under 30%.
- Producers were losing 50% of more crop to pests especially close to the harvest period.
- There was no support system for new and beginning farmers due to lack of educational materials.

Major outcomes from IPM project based on extension evaluations done throughout the grant period.

- Overall adoption of organic IPM practices: 30% in 2013 to 72% in 2015 (almost doubled over the project period and continues to rise). Farmers directly consulting with extension (25 to 30 each year) have IPM adoption rate of 90% due to urgency to protect crops.
- About 80% producers are using IPM publications that include the SE Vegetable Handbook, IPM Newsletter, High tunnel crop production, and Alternative Vegetable IPM slide chart (print copies for all of them exceed 15,000). These are now critical resources for producers and updated annually.
- 57% farmers are using scouting practices to detect and correctly identify the pests before an outbreak occurs. 44% producers in 2015 used bioinsecticides based on our recommendation.
- Crop loss prevented is about 50% in vegetables crops in general. There is a strong demand from farmers to continue hands-on training and online content that farmers can check on their own.
- The average direct impact of this IPM project is estimated to be about $383,000 per year. In three years (2013 to 2016) we estimate the rough impact to be close to $1 million.
- Indirect impact of the IPM project is estimated to be $1.6 million per year (~$5 million in three year period).
- Impact videos 2016: https://youtu.be/BU2KvcTUCtM
- Impact video 2015: https://youtu.be/kB37fleY6gU
- Impact video 2014: https://youtu.be/4VYJR-Ylkr4

IPM Newsletter Impact Survey 2016: Since 2010, the Alabama IPM Communicator newsletter has been a team publication with Regional Extension Agents, Extension Specialists, and County Extension Coordinators contributing articles about crop production, pest management, and training events. There are about 2,500 subscribers that receive 15 issues of the newsletter and 5 event notifications throughout the year. The Alabama IPM Communicator website has 230+ articles in the archive that are available as blogs for reading on mobile devices and PDF for traditional readers. Thank you to all readers for their support to the newsletter that continues to be better itself every year.

2016 IPM Newsletter Survey Highlights (n=125):

- 22% respondents were producers, 28% home gardeners, 20% educators.
- 65% producer respondents have 10+ years of farming experience, **35%** are beginning farmers

- 75% respondents live or farm in Alabama
- 60% find the articles easy to read
- Fruit IPM, Vegetable IPM, event announcement, weed control and garden IPM were the top most useful articles
- 63% attended events due to seeing them in the newsletter
- 71% respondents used IPM recommendations from the newsletter articles
- 85% recommend the IPM Communicator newsletter to others
- 40 % respondents rated the IPM Communicator as excellent when compared to obtaining information from other electronic sources
- 66% strongly agree that the IPM Communicator should continue in 2016

Newsletter Reader Comments:

- *It is good to hear of current research but even more helpful to have information presented in ways that show how it can be applied in the here and now.*
- *Keep up the great work; this is probably one of the best-kept secrets in IPM. Find ways to spread this far and wide!*
- *Keep up the good work. I enjoy reading the articles. They are timely and of great practical use. Thank you for keeping us informed.*
- *I appreciate being able to connect with Auburn's work through this format- as someone who works with a head down focus, it is easy to become disconnected from the work and advances of others (especially in this state). I think this publication is very useful and I support it- if anything I think it would be great to expand the scope of it.*

☐ If outcome measures were long term, summarize the progress that has been made towards achievement.

☐ Provide a comparison of actual accomplishments with the goals established for the reporting period.

☐ Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.

Please see answer above.

BENEFICIARIES

☐ Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.

Audience included 35% new and beginning farmers, 30% experienced producers, 15% gardeners, 10% crop advisors, and 10% educators.

☐ Clearly state the quantitative data that concerns the beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

LESSONS LEARNED

☐ Offer insights into the lessons learned by the project staff as a result of completing this project.

This section is meant to illustrate the positive and negative results and conclusions for the project.

Major issues implementing this project included the following:

- Every crop production year is different. Drought or too much rainfall can make IPM implementation difficult.
- Farmer's attitudes to new technology is varied. Experienced producers may be resilient to making drastic changes or improvements in their production practices. New producers are very eager to learn and can be easily trained.
- More and more farmers want to learn about technology on their own, so investment in online resources must continue. Many new farmers are using social media channels to receive updates and this challenges the traditional communication channels.

☐ Provide unexpected outcomes or results that were a effect of implementing this project.

☐ If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.

CONTACT PERSON

☐ Name the Contact Person for the Project: Dr. Ayanava Majumdar, Extension Entomologist and

☐ Telephone Number: 251-331-8416

☐ Email Address: bugdoctor@auburn.edu

ADDITIONAL INFORMATION

☐ Provide additional information available (i.e. publications, websites, photographs) that is not applicable to any of the prior sections.

AWARDS & NOMINATIONS

Name	Year
NACAA National Category Finalist Bound Book – High Tunnel Crop Production Handbook *Plaque and cash award*	2015
NACAA Southern Region Communication Award: Publication – Alternative Vegetable IPM Slide Chart *Certificate and cash award*	2015
NACAA Southern Region Communication Award: Bound Book – High Tunnel Crop Production Handbook *Certificate and cash award*	2015
NACAA Southern Region Communication Award: Team Newsletter – Alabama IPM Communicator *Certificate and cash award*	2015

Blue Ribbon Communications Award, Southern Region American Society of Horticultural Sciences Publication – Alternative Vegetable IPM Recommendation Slide Chart *Plaque*	2015
National Winner, NACAA Search for Excellence Award in Sustainable Agriculture Award recognizing the impact of Alabama SARE Program (2012-2014)	2014
Southern Region IPM - Pulling Together Award Award recognizes the impacts of the Alabama IPM Communicator Newsletter	2013

Major Producer Handbooks/ Field Guides (updated annually):

[Yearly circulation = 26,500+]

9. **Majumdar, A.** 2013-2016. Commercial Horticulture Programs & People. EX-0162. Alabama Cooperative Extension System, Auburn University. [Online] http://www.aces.edu/pubs/docs/E/EX-0162/EX-0162.pdf.

10. **Majumdar,** A., Reeves, M., and A. Chambliss. 2014. High Tunnel Crop Production: Training Module for New and Beginning Farmers. ANR-2157. Alabama Cooperative Extension System, Auburn University. Print circulation: 2,150 copies. iBook downloads: 250. [Online] https://store.aces.edu/ItemDetail.aspx?ProductID=18531

Awarded the National Finalist in Bound Book Category by the National Association of County Agricultural Agents. Other states requesting publication: FL, TN, AR, MO, NY, GA, MS.

11. **Majumdar, A.** 2014, 2015. Insect Management. *In* Master Gardener Handbook (K. Smith, Editor). ANR-0522. Alabama Cooperative Extension System, Auburn University. Circulation: 1,500.

12. Braman, K., F. Hale, and **A. Majumdar.** 2014. Beneficial insects, spiders, and mites in the southeast. UGA Extension, Circular 1055. Circulation: 4,000. [Online] http://extension.uga.edu/publications/files/pdf/C%201055_1.PDF

13. Westerfield, R., K. Braman, E. Little, F. Hale, and **A. Majumdar.** 2014. Troubleshooting vegetable production problems in the Southeast. UGA Extension, Circular 1054. Circulation: 4,000. [Online] http://extension.uga.edu/publications/files/pdf/C%201054_1.PDF

14. **Majumdar, A.,** A. Chambliss, H. Fadamiro, R. Balusu, and A. Randle. 2014. Alternative Vegetable IPM Recommendation Slide Chart. ANR-2190. Designed and published by Datalizer Inc., Addison, IL. Information Copyright by ACES. Circulation: 8,000 copies. [Online] https://store.aces.edu/ItemDetail.aspx?ProductID=18412.

Awarded the 2015 Blue Ribbon Extension Communications Award by the American Society for Horticultural Sciences. Other state requests: FL, TN, AR, MO, NY, GA, MS, KY, NC, MD, OH, PA, MD, NE, VA, IA, TX, IL, and SC.

15. **Majumdar, A.** 2016, 2013, 2011. Home Garden Vegetables: Insect Control. ANR-1305. Alabama Cooperative Extension System, Auburn University. Circulation: 1,500. [On-line] http://www.aces.edu/pubs/docs/I/IPM-1305/IPM-1305.pdf

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1. Extension Websites:

Resource name	Start date	Features	Peak views	Active
Vegetable Entomology, Alabama Coop. Extension System (www.aces.edu/vegetableipm)	2008, upgraded in 2015	Project reports, factsheets insect ID,	90 views per day during	Yes

			scouting, IPM Blogs	summer peak	
	Alabama IPM Communicator Blog/Website (www.aces.edu/ipmcommunicator)	Launched in 2014		100 views per day	Yes

2. Social Media Usage:

	Channel Name & Link	Start date	Features	Usage Statistics	Active
YouTube Videos	ACES Fresh from the Field	2012	15 IPM and impacts videos	8,500 views (2016); 5,000 views (2015); 2,441 views (2014)	Yes
Facebook	Alabama Vegetable IPM	2010	IPM updates for vegetable growers	623 subscribers	Yes
Facebook	Alabama Ext. Commercial Horticulture	2013	Program updates	400 subscribers	Yes
SlideShare	IPM4Alabama (http://www.slideshare.net/IPM4ALABAMA)	Jan. 2010	37 IPM presentations	60,000 views 70 followers 1500+ downloads	Yes

ALABAMA SPECIALITY CROP
Alabama State
Department of Agriculture and Industry

Name of State Point of Contact
Johnny Blackmon

Project Name
Africatown Community and Homestead Garden Program

Type of Report
FINAL PERFORMANCE REPORT

Date Report is submitted
December 18, 2016

SUMITTED BY: MICHAEL C. MITCHELL, JR, Program Coordinator
mcm126@gmail.com
Approved by:
Cleon Jones, President of Community Development
Charles Hope, Director of Programs

PROJECT SUMMARY

The project proposed was intended to assist in providing an expanded opportunity to bridge the gap the Africatown community experiences as it relates to obtaining healthy foods. For over fifty (50) years, this community has utilized a barren strip of land to farm with varying results.

The nearest grocery outfit is a large department store supercenter that is located 8.1 miles north of this community in a nearby city. The Africatown area has no access to public transportation or other easy access to the shopping center.

Africatown is a unique community because it represents a group of Africans who were forcefully removed from their home land, sold into slavery, and then formed their own self-governing community, all while maintaining a strong sense of African culture. Their ultimate hope was to return home to Africa but the lack of funds caused them to remain where they were. Similarly, a current low-income economic base results in the community members remaining in difficult circumstances.

The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden Program to date has successfully provided a means by which the citizens of the Africatown community reclaimed a sense of self-reliance, self-sufficiency and self-sustainment.

As a result of this funding opportunity, the Africatown community has attracted support of other unities.

- Deeding of the Jake's Lane property to the community by Alabama Power
- Donation of John Deer Tractor which allows the community to maintain and perform site preparation each season

PROJECT APPROACH

The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden main approach was motivated by the need for community involvement in a common project. The community garden aspect of the project had a direct approach with the purpose of evolving a site which has been gardened on for at least 50 years in to an organized community garden.

At the beginning of this funding opportunity, approximately less than 25% of the area was being maintained and utilized. Today, 95% of the area is maintained with 75% of that being utilized.

The community holds weekly, strategy meetings with the gardeners and community members where seasonal plans and projects are presented. Workshops both on site and in classroom settings are scheduled around these meetings.

GOALS AND OUTCOMES ACHIEVED

Expected Measurable Outcomes:

The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden Program has provided for:

- Increase in the number of residential community gardens (homestead gardens)
- Educated community residents regarding the importance of a balanced healthy diet
- Coordinated garden efforts for this community
- Prepare residential farmers to sell produce at a newly created Africatown U.S.A. Farmers Market

The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden Program realize the expected measurable outcomes by focusing on the following goals:

Goal #1: Establish a baseline indicator of consumer knowledge of specialty crops and their nutritional values for citizens of the Africatown community.
Baseline: Will be determined in the pre-workshop surveys.
Target: 2014: A five percent (5%) increase in knowledge as measured through pre- and post-workshop surveys.
Performance Measure: Data collected from pre, mid and post community surveys
Goal Achieved: Knowledge was increased through workshops and confirmed by expressed community acceptance.

Goal #2: Increase the availability of easily accessible and affordable fresh specialty crops for Africatown citizens.
Baseline: Will be established in the pre-garden installation Community Surveys
Target: A twenty-five percent (25%) increase reports of consumer satisfaction
Performance Measure: Data collected from pre-and post- Africatown USA Community and Homestead Garden Program surveys
Goal Achieved: Increased number of homestead gardens established during program
Total usage of garden property for individual or family gardening plots

Goal#3: **Improve knowledge of making healthy nutritional choices.**
Baseline: Will be established in the pre-workshop surveys.
Target: A twenty-five percent (25%) increase in overall test scores
Performance Measure: Increase in knowledge as measured through pre- and post-workshop surveys
Goal Achieved: Due to accessible fresh vegetables

Goal#4: Improve consumer knowledge of production and preparation of Alabama Specialty Crops

Baseline: Will be established through pre- and post- workshop surveys
Target: A twenty-five percent (25%) increase in overall test scores
Performance Measure: Increase in knowledge as measured through pre- and post-workshop surveys
Goal Achieved: By increased number of harvests from the site and the increase of gardening participants.

BENEFICARIES

The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden has impacted each individual in the Africatown community in that it has

- Provided nutritious healthy food options for a low-income food desert
- Introduced new and innovative methods of farming to this community
- Provided a comparison and evaluation of the conventional farming techniques and methods utilized by this community presently to new innovative farming methods
- Provided training workshops for community farmers related to
  1. Gardening Techniques
  2. Marketing
  3. Nutritional Choices
  4. Entrepreneurial Opportunities
  5. Restored pride of ownership

Also, The Africatown U.S.A., Mobile, Alabama – Community and Homestead Garden provides fresh vegetables each harvest season to the low-moderate income residents. The senior population benefited from the homestead portion of the project. The households were able to participate in gardening activities from home.

LESSONS LEARNED

Throughout this project we learned the importance of sharing common ground. Many of the difficulties were rooted in misunderstanding of terms used. Few nonresidential participants of Jake's Lane garden program had a different standing on the word "community". This select few figured that residents and those in passing, idea of "community" would encourage theft. Through change in participants and the community meeting discussions, 80% now know that organizing on common property with the intent of bettering the quality of life in a particular locale through the means of gardening is the natural purpose of the Jakes Lane Community Garden. The organization

with current ownership of the Jakes Lane property has functions in place to ultimately approve or disapprove initiatives and meetings to stay updated on any issues relating to gardening.

With various families gardening on this land for the previous 50 years, complacency was a small issue to solve. The funding opportunity enabled us to bring in experts to provide feedback and seminars geared to the different techniques we were using. A few of these gardeners, in turn, shared their knowledge gained with those who were interested in homestead gardens.

The homestead portion of the project was highly welcomed but was not as simple to implement. Issues such as health conditions, indecisiveness, and lack of constant care caused for this aspect to not be as successful as the others.

Through the use of our organization skills, networking abilities, and overall focus we began to think in unison. As a unit, we put the spotlight on the one thing the Africatown community has done throughout history. Gardening. The ability to clear and maintain the portions of the land previously unused, was a sign that the community had a vision with the work ethic required to bring it to fruition. Shortly after, the community was rewarded the Jakes Lane Community Garden site.

Highlighting gardening as part of the Africatown history and future has created work that is time consuming. Nevertheless, it is rewarding over time. Utilizing this funding opportunity allowed us to host events that exceeded our expectations. Those in attendance were amazed by the overall appearance of sites such as Jakes Lane.

Because of the success of the project the community also received the donation of a new tractor and equipment to assist and insure the future growth and development of this project.

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Deep South Food Alliance

2400 East Coast Avenue

Linden, AL 36768

Sub-Grantee - Deep South Food Alliance (DSFA)

Program Name - Improving Volume and Quality of Vegetable Production of Historically Disadvantage Farmers by integrating low cost tunnel house production with sustainable mini plastic culture farming methods.

Project # 12 Agreement # 12-25-1652)

Final Report

September 30, 2013 – September 29, 2016

Project Summary

The primary purpose of the above project was to increase the production of vegetables by Historically Disadvantaged Farmers year round. In this effort the following practices were demonstrated:

1. Low cost High Tunnels
2. Integration of plastic culture techniques such as drip irrigation and plastic mulches
3. Develop of planting protocols and practices for High Tunnels and mini – Plastic culture; this was completed through one on one contacts, field days and demonstrations.

Providing the above outreach and technical assistance to disadvantage farmers was very timely because a partnership movement with the Deep South Food Alliance (DSFA) is in full force in

West Alabama. Over time with proper resources these farmers will be in a better position to supply the Deep South Food Alliance food hub. At this point the DSFA is providing aggregation, processing, packing and marketing of leafy greens, peas and other vegetables on the open market.

In addition, DSFA are in position to send field representatives out to the farmers and provide assistance with the following.

1. Installation of low cost wood frame hoop houses according to the NRCS standard and specifications.
2. Assist with the Erection of Steele frame hoop house kits according to NRCS standards and specifications.
3. Working in conjunction with local Soil and Water Conservation Districts, demonstrate the use of plastic and drip irrigation systems.

Project Approach – Goals and Outcomes Achieved

Goal # 1 - Manufacture low cost high Tunnel Hoop Houses or install existing manufactured High Tunnel kits to enhance the affordability of Socially Disadvantage farmers to extend vegetable growing seasons.

- Four small farms were chosen and (4) 20’ x 50’ High Tunnel Wood Frame Hoop Houses were designed, prefabricated and erected on small farms in Wilcox and Marengo Counties. Two of these farms received at least 2/10 acre of plastic and drip irrigation systems as well.

- One 30’ x 80’ low cost wood frame Hoop House was constructed on a small farm that will be used for training. This site also, included ¾ of acre of plastic culture to demonstrate the use of such practices.

- The above were used as a demonstration because NRCS and other RC&D Councils were looking very closely at the design of the wood frame High Tunnel to ensure that it would meet NRCS standards and used in the NRCS EQIP cost share Incentive Program. Since this time the DSFA have been working very close with the wiregrass RC&D council on the mortified design and have agreed to be a contracting vendor to help farmers with the construction of the low cost wood frame High Tunnels.

Goal # 2 - Establish Enterprise Budgets for 1/10 acres plots, using plastic and drip irrigation systems and high density seasonal planting

During the project period the following accomplishments were obtained.

Six small farmers were selected and at least one 2/10 acre plot of plastic and drip irrigation system were installed. When we started this process we were using white plastic to reflect heat in the summer time. However, doing the fall and winter we found out that leafy greens did not respond very well to the white plastic. Therefore DSFA encouraged small landowners to use black plastic and they got a better response. At this point small farmers have an awareness of plastic and drip irrigation systems and the value of Enterprise budgets because of the hands on outreach work that has been done by the DSFA. However, a continual outreach program such as whole farm planning, business development, better market access and sustainable job and wealth creation need to be pushed to create excitement in the food production community by Socially Disadvantage. Five small farmers round the table workshops were conducted around the above subject and over 35 farmers and family members attended.

Goal # 3 - Develop planting protocols (farm plans) to standardize production practices to enhance the possibility of meeting market demands

The above was approached from the standpoint of using what is already out there that we could use to promote this goal. Therefore, we worked with the Tuskegee University and Alabama Cooperative Extension Systems to get Enterprise budgets that small farmers could follow. However, when the DSFA continued to dig into the needs of the farmers it became apparent the following is needed:

1. An aggregation facility that could purchase vegetables from small farmers in West Alabama
2. Access to Capital so they can grow and produce based on market demands. Training need to be completed as it relates to wholesale and retail prices
3. Access to resources that will enable small disadvantage farmers to irrigate their crops and take the field heat out of harvested produce utilizing on farm cold storage.
4. Access to financial resources to acquire and pay for farm labor to plant, maintain, and harvest produce. This includes transportation associated with moving product from A to B in a safe manner. Also, having adequate resources and getting in compliance to meet food safety regulations is a concern for disadvantage farmers.

During the project period the above goal components were addressed as listed below:

A. The DSFA in cooperation with partnerships such as the Marengo County Commission Alabama Cooperative Extension System, Tuskegee University Extension Program, the

Ford Foundation, the Wallace Center and this project have created a food hub/aggregation/processing and packaging center in Linden, Alabama. DSFA is working with Disadvantage farmers in the area to help them to participate in mainstream agriculture to meet future market demands. At this point we have over 25 small scale farmers that we are trying to educate as it relates what the DSFA is trying to build for West Alabama.

B. During the project period DSFA partnered with the Farm Service Agency (FSA) and trained 15 DSFA associates on all of their loan programs. After this workshop DSFA developed a system to transfer information concerning FSA farm loans to Disadvantage farmers that they are working with. In this process the DSFA found that such loans seem to be harder to cash flow than livestock type loans and the repayment appears to possible more difficult. However, other financial institutions such as local Banks and Farm Credit Councils have shown interest. During this project over 50 small farmers made applications to the FSA Micro-Loans Program working in conjunction with the Tuskegee Extension Program.

C. As it relates to irrigation for small Disadvantage Farmers the DSFA found that the issuer can be solved in most cases using a drip system. Therefore during the project period DSFA Alliance assisted over 15 small farmers with this systems

D. Also, DSFA observed that Small disadvantage Farmers did not have adequate resources to address food safety requirements to include proper transportation. Therefore, DSFA is becoming involved with the Alabama Cooperative Extension System and the Food Safety Regulating Officials to become a train the trainer applicant so Disadvantage Farmers will have access to hands on training at their level. Also, during the project period the DSFA have designed and constructed one 6’ x 12’ and one 6’ x 24’ refrigerated trailer units equip with total installation, a/c unit, and col-bot system that will ensure that a good cool temperature is maintained when harvesting vegetables at the farm level. These units have been demonstrate during workshops and field days where over 30 small farmers attended.

Beneficiaries

The following are the groups that benefited from the project progress while trying to reach project completion:

1. Small African American Disadvantage farmers and their families benefited because they were targeted, selected and low cost High Tunnels and small scale plots were demonstrated using plastic and drip irrigation on their land.

2. Young people benefited because 5 youth and 10-15 young adults gained part-time employment in the production of vegetables and the development of value added products by the DSFA.

3. Other small farmer enterprise producer benefited as small scale cattle producers who took advantage of FSA micro loan program.

4. Local school systems will benefit now because DSFA will be able to purchase locally for their programs from disadvantage farmers.

Lesson Learned

In this project the DSFA project staff learned that you have to build something that will truly help socially Disadvantage Farmers. Generally, people and organizations think that they understand how to solve the problems that exist in the socially Disadvantage world. Therefore, you have to build what you think is needed but don't depend totally on small scale farmers for your vegetable production needs. The DSFA have to look outside of the Socially Disadvantage farm world in an effort to fill market demands. The other issuers is DSFA found that trying to work totally with African American Small Farmers don't work, you have to develop a relationship with mid-size farmers as well. Also DSFA learned that Small Disadvantage Farmers need to be in a position to make a profit in the production of vegetables from the retail and wholesale stand point.

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Final Performance Report

Sankofa Youth Agricultural Project

Submitted to the:

USDA Alabama Department of Agriculture

Subgrant # Project # 13

Submitted by:

Federation of Southern Cooperatives/LAF

P. O. Box 95 Epes, AL 35460 1-205-652-9676

Sankofa Youth Agriculture Project

Project Title: Sankofa Youth Agricultural Project

Project summary

The Sankofa Youth Agricultural Project (SYAP) was started by the Federation of Southern Cooperatives/LAF in 2004 to meet the socio-economic needs of youth in underserved, limited resource communities. In 2013 the SYAP was awarded $25,000 under the Alabama Specialty Crop Block Grant for a 2-year project. The objectives of this project were to:

1. Increase child and adult nutrition knowledge and consumption of specialty crops,
2. Develop Good Agricultural Practices, and
3. Promote sustainability.

The overall goal of the project is to encourage the production and consumption of specialty crops which we believe will help reduce some of the health issues associated with unhealthy food choices prevalent in the Black Belt area.
In the duration of this 2 year project, activities with high school students primary started in the summer season. Student- participants of the project were recruited to participate in an gricultural related project at the Federation's Rural Training and Research Center.

- In the first year, youth were introduced to value-added agriculture curriculum on developing a Salsa raised bed garden project, in addition to in class teaching of good agricultural practices, farm visits and produce marketing.

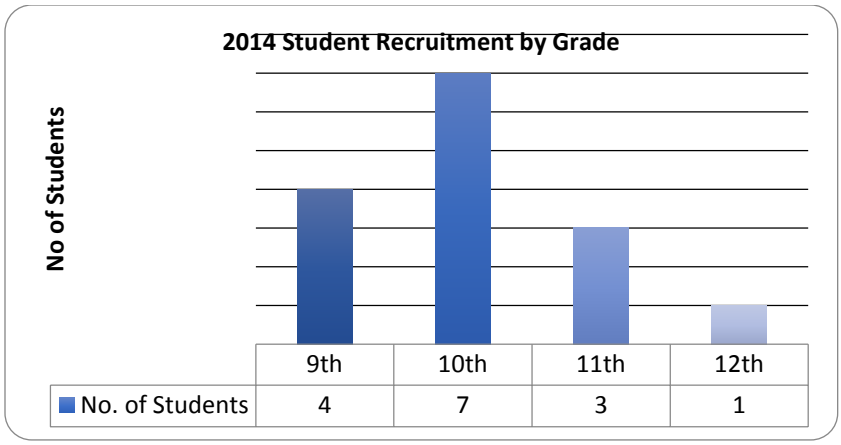
- During the second of the project, the students worked alongside Federation and ASAC staff to construct home raised beds in the towns of Gainesville, and Epes, Alabama.

PROJECT APPROACH

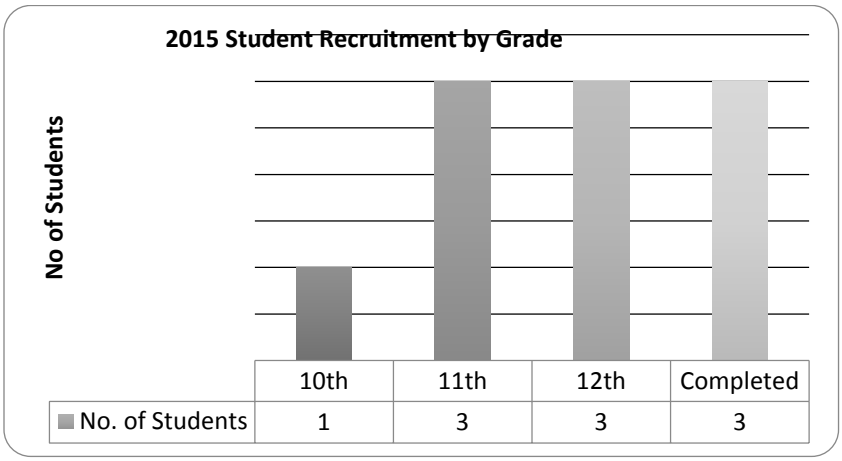
The staff of the Federation of Southern Cooperatives and the Alabama State Association of Cooperatives worked together to provide oversight of the Sankofa Youth Agricultural Project (SYAP) activities. In order to recruit the targeted individuals, the Federation staff collaborated with the Principal and teachers at Sumter Central High School, to introduce the program to students in the 9th through 12th. With slightly over 20 applicants, fourteen (14) students were selected to participate in the program in Year 1; and ten (10) students were selected for the program in Year 2. Applicants went through a formal interview process, and the students that were selected participated in an orientation, along with their parents/guardians. The orientation discussed the goals and objectives of the project to ensure support and commitment—from both youth and parents/guardians. At the end of the orientation the students signed a memorandum of understanding. To ensure safety on and off farm, an emergency response workshop was presented by Federation's partners, Alabama Cooperative Extension and the Livingston Fire Department.

Activities Performed in 2014 and 2015

- Fourteen (14) high school students from Sumter County, Alabama successfully completed the 2014 summer educational and employment project.



- Ten (10) students from Sumter County, Alabama successfully completed the 2015 summer educational and employment project.



The 2014-205 Sankofa Youth Agriculture Project (SYAP) focused on growing vegetables in raised beds, where students were introduced to a Salsa garden project. We chose to do a Salsa garden in an effort to increase students' knowledge about production of specific specialty crops, and then to further show added benefits of value-added production, and consumption. Also, to ensure that all the students were able to fully participate in this educational experience, we divided the students into four groups based on four different tomato varieties. Each group operated as a mini-cooperative enterprise, and was responsible for researching when plants would reach maturity, methods of marketing their products, and approximately, every two weeks, the students would complete observation sheets, documenting: plant is growth, insect & pest activity, signs of yellowing or wilting, vegetables or fruits growing, and whether the garden area needed weeding,etc.

In an effort to promote and develop financial literacy in our program, the youth participants were encouraged to open a bank account where their checks were deposited at each pay period. Another component of the financial literacy covered how to maximize their spending by teaching how to do grocery shopping, replacing the unhealthy food choices with vegetables to encourage

consumption of specialty crops which we believe will help reduce some of the health issues associated with unhealthy food choices prevalent in the Black Belt area of Alabama

Activity 1: Recruitment, Orientation , and garden activities in Year 1

- Participants for the program were recruited in April, 2014. On June 16, 2014, Alabama State Association staff, and Federation staff held an orientation with students and parents to introduce the students to objectives of the grant program; and the curriculum for the 2014 Summer (focusing on the Salsa Raised Bed Gardening Project)

- On June 18, 2014 the students officially started working on, and began garden activities and hands-on instruction on growing various vegetable ingredients for salsa, which included: tomatoes, bell peppers, jalepeno peppers, cilantro and onions. Students helped to construct some of the remaining raised beds, cleaned the garden area, cleaned out the raised beds by pulling weeds, and planted the vegetable transplants.

- The program staff facilitated and encouraged youth to open up savings accounts at the local credit union. At the end of the month, on June 30th, 2014 students received a partial payment for hours spent in the project. Deposits were made by Alabama State Association staff Ethel Giles.

- On August 6, 2014 Mrs. Daisybelle Thomas Quinney for Voices of Triumph came to the Center to show students how to prepare a fresh garden salad using vegetables from the raised bed, and the Federation's hoophouse. On August 11, 2014 a University of Alabama AmeriCorps VISTA member, Elaheh Hess, showed students how to make fresh Salsa with garden ingredients

- In June, some of the youth that were eligible participated in a week-long Forestry Camp organized. This provided the participants the opportunity to learn more about other area of forestry, the environment and recreational activities under Forestry.

- **Visit to local farm** On Saturday, July 12, 2014 the SYAP students traveled with project staff Pam Madzima and Osa Idehen to the E & J (Ellington) Farm in Emelle, Alabama, (Sumter County), where they assisted Mrs. Ellington in planting pumpkins and later on peas in her plastic mulch field. This enabled students to learn how to grow vegetables in both a raised bed area, and on the field.

Activity2: Home, Vegetable Garden Raised bed construction in Gainesville and Epes, Alabama in Year 2

- During the second year of the Sankofa Youth Agriculture Project, approximately seven students returned to the project from the previous year, with an addition of three new students. One of the main objectives of the second year project was to construct two home raised bed vegetable gardens at two homes that the students selected. The goal and purpose of doing this was to further 'Increase child and adult nutrition knowledge and consumption of specialty crops' by establishing these raised beds at homes, outside of the student's project area.

- One of the positive outcomes of the project occurred when a student and his parent established their own home garden, vegetable raised bed in Livingston, Alabama. The project staff were pleased to see the direct, tangible impact of the efforts and resources of the project.

Activity 3: Sankofa Youth Agriculture Project Presentations at conferences, schools, communities meetings

- On Thursday, October 22, 2015 Federation program staff, Pamela Madzima gave a presentation about the Sankofa Youth Agriculture project, during the University of West Alabama's "A Day of Mentoring and Agricultural Leadership." The objective of the conference was to expose high school students in Sumter County to the various career opportunities that exist in the field of Agriculture and other related disciplines. Approximately 35 people were present.

- On June 30, 2015, Mr. Hassey Brooks with the Alabama Dept. Agriculture & Industries conducted a site visit of the Sankofa Youth Agriculture Project at the Federation's Rural Training and Research Center in Epes, Alabama. During the meeting, Mr. Brooks met with the Federation and ASAC project staff, as well as several student participants of the project. Mr. Brooks had an opportunity to directly interact with the students, and hear presentations about the program, and the lessons they had learned as it relates to specialty crops. The program staff and students also gave Mr. Brooks a tour of the garden area, where vegetables had been planted, and a tour of the home raised bed that one of the participants had established at his home in

- ***Home garden (1) Gainesville, Alabama:*** The first home garden was constructed in Gainesville, Alabama on July 17, 2015. The students that were present had an opportunity to work along with Federation and ASAC staff to directly apply what they had learned during the previous year.

- ***Home garden (2) Gainesville, Alabama:*** The second home garden was constructed in Epes, Alabama on July 18, 2015. The program participants planted bell peppers, jalepeno peppers, collard greens.

GOAL AND OUTCOMES ACHIEVED

The goal for this project was to increase child and adult nutrition knowledge and consumption of specialty crops, develop good agricultural practices, and promote sustainability. To achieve these goals, the project focused on growing vegetables in raised beds, where students were divided into groups of four based on four different tomato varieties. Each group operated as a mini-cooperative enterprise, and was responsible for researching when plants would reach maturity,

methods of marketing their products, and approximately, every two weeks, the students would complete observation sheets, documenting: plant is growth, insect & pest activity, signs of yellowing or wilting, vegetables or fruits growing, and whether the garden area needed weeding,etc.
Through this process students learned how to grow a variety of vegetables, and participated in two vegetable preparation demonstration activities, where they worked alongside an adult to prepare healthy snacks with the vegetables.

BENEFICIARIES
The high school students that were recruited in the program, were the direct beneficiaries. Most of the students recruited indicated that this was their first job that enabled them to generate and earn a much needed monthly stipends while their learned various life skills and good gricultural and nutrition practices. In June, some of the youth participated in a week-long Forestry Camp organized by the Federation's Alabama Forestry partners. This provided the participants the opportunity to learn more about other area of forestry, the environment and recreational activities under forestry.

Other direct beneficiaries of the program were the homes and farms where the students provided assistance in constructing raised beds; and vegetable plants.

LESSONS LEARNED
The goal and purpose of the Sankofa Youth Agriculture Project activies was to 'Increase child and adult nutrition knowledge and consumption of specialty crops'.

1) Engaging youth and students in agricultural activities is one of the best methods in educating students about food, and the benefits of consuming various types of specialty crops and vegetables;

2) Maintaining small-sized work groups ensures that each student is able to activiley participate in all aspects of the agricultural production process.

3) Connecting children to real life farms, and markets where food and grown and sold, provided a bigger picture of the process of getting speciality crops from the farm to the table.

- Finally, instilling a reward system further encourages student participation and encouragement. The program was able to compensate the students for their hard work in growing vegetables through the summer project. This process instilled a life skills work ethic in the field of agriculture production. During this process, the students also learned how to work in a team; read and follow instructions; and ensure good quality control, and customer satisfaction. Most importantly, the students were able to directly participate in sharing what they learned in vegetable, specialty crop production.

One extremely positive and unexpected outcome from the program, was the establishment of a e home raised bed that one of the participants had established at his home in Livingston, Alabama. The student was hoping to develop a home garden small business where he would help community members establish home gardens, and plant specialty crops.

Problems and Delays

The major delay we faced was completing the instructional material for raised bed set up, recipes for specialty crops. The project staff have began the process, but were not able to complete it. This program occurred as a result of two main challenges:

1. One of the program staff that was working with the lead coordinator left the organization to pursue other career goals.

2. Secondly, since the remaining program staff had to fulfill the obligations of multiple projects, most of her time was focused on trying to fulfill the project that was paying her salary.

We hope in the future, to include a designated staff position for this project, and include resources in the budget to pay for the position; in addition to the student consultant positions. Please see the budget below for the account of funds that were remaining, and were allocated to develop the instructional manual.

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Funding Expended To Date

Approved Budget Category	A. Approved Budget	B. Amount of request in 2016	C. Year To Date Costs	D. Budget Balance	E. Percent Expended
1. Personnel	$ 12,600	$ 1,380.64	$ 9,732.95	$1,486.41	88%
2. Travel	$ 2,200	$ 1,164.49	$ 799.00	$ 236.51	89%
3. Supplies	$ 8,208	$ 1,068.97	$ 3,306.98	$ 3,832.05	87.73%
4. Equipment	$ 0	$ 0	$ 0	$ 0	0%
5. Contract/Consultant	$ 1,500	$ 330	$ 1,720	-$ 550	136.6%

6. Other	$ 492	$ 0	$ 215.88	$ 276.12	56.1%
7. **Total Cost**	$ 25,000	**$ 3,944.10**	**$ 15,774.81**	**$ 5,281.09**	78.8%