

**Kentucky Department of Agriculture
2015 Specialty Crop Block Grant
Final Report**

15-SCBGP-KY-0037

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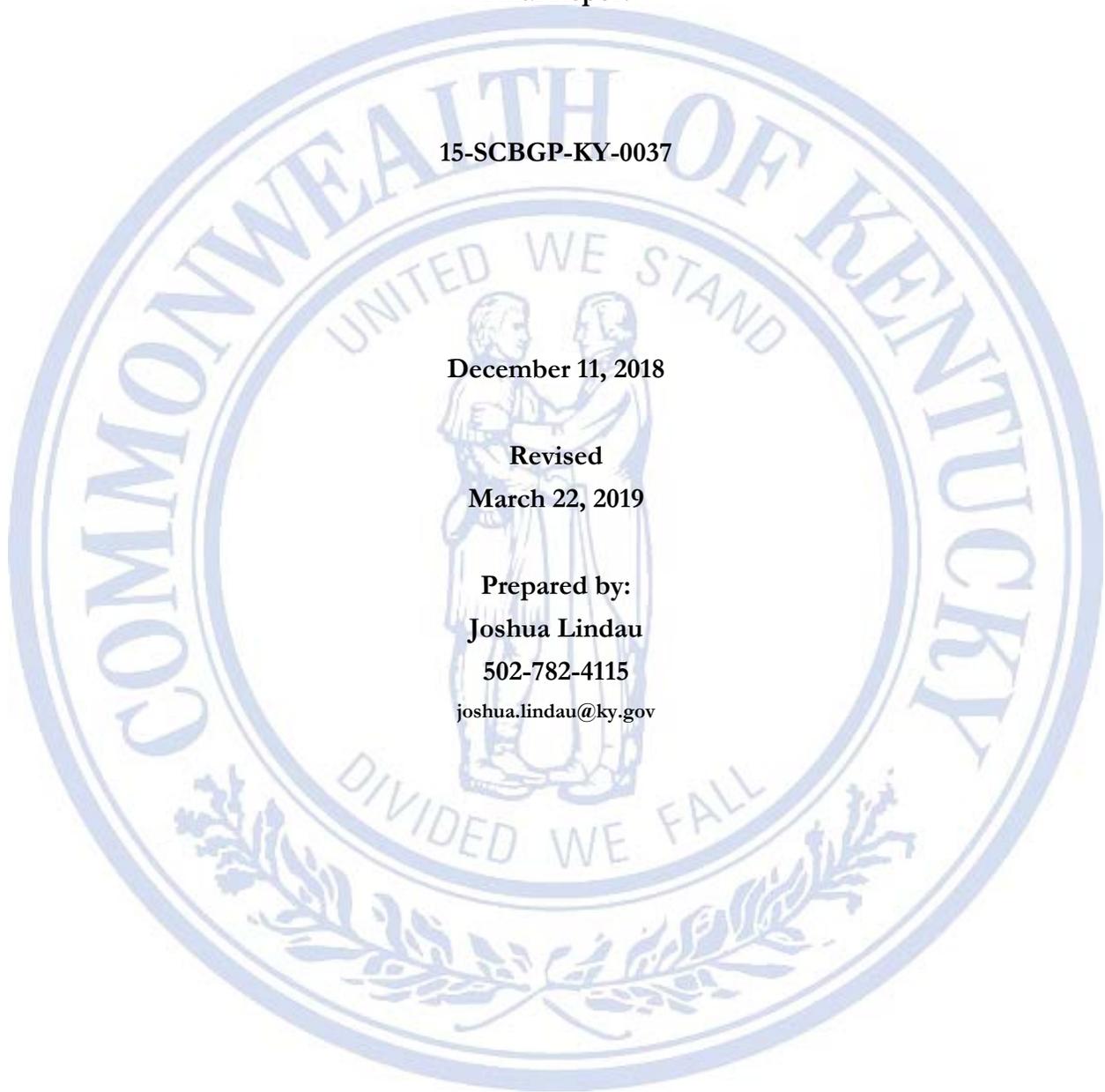


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GRANT INFORMATION

AGREEMENT

AMS Agreement Number:	15-SCBGP-KY-0037		
Period of Performance:	Start Date: 9/30/2015	End Date:	9/30/2018
Award Amount:	\$291,564.95		

RECIPIENT

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REPORT

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Project#1: *Plate It Up! Kentucky Proud* Recipe Development and Evaluation for Consumers and Producers: Healthy Meals that Serve One or Two

Project Summary

Strong local food systems benefit Kentucky communities and consumers. The last several years have been a period of successful transition for many Kentucky food producers as more markets have become viable options for Kentucky specialty crops. The *Plate It Up! Kentucky Proud* (PIUKP) project is designed to link the expertise of research, teaching, and extension faculty at University of Kentucky with dietetics and human nutrition students, extension agents, the Kentucky Department of Agriculture, and local producers to increase the purchase of Kentucky specialty crops.

The project was designed to test, develop, disseminate, and demonstrate new recipes featuring local seasonal specialty crops in order to market Kentucky crops as a staple to a healthy lifestyle. The project educated consumers about access and availability of local specialty crops and how to adopt best practices for selection, storage, and food preparation. *Plate It Up! Kentucky Proud* has been funded through the ACPBP since 2009. Through the grant funding, the project has expanded each year to reach more Kentuckians and to develop a wide variety of recipes to appeal to consumers based on their preferences, family structure, income, and dietary restrictions. As well, the sustained grant funding has allowed for the development of multiple recipes using a wide range of specialty crops, thus having a greater impact on producers. The work of the SCBG 2015 project was specifically targeted at developing and testing recipes that had smaller serving sizes, appropriate for one or two. In some cases, the recipe was one where leftovers could be easily refrigerated or frozen for future use. During the course of the project, 14 new recipes were fully developed into professional recipe cards and distributed to Extension agents in all 120 counties in Kentucky.

The two primary aims of this project were:

- 1) To increase demand for Kentucky specialty crops by working with consumers to teach them how to select, store, preserve and prepare vegetables, fruits, nuts, and herbs as part of health-promoting recipes following USDA MyPlate guidelines.
- 2) To improve the health and well-being of Kentuckians by increasing purchase, preparation, and consumption of specialty crop foods to provide individuals of all ages with the skills needed to promote optimal health and support strong local food systems.

Project Approach

#	Objective	Completed?	
		Yes	No*
1	Increase the number and scope of recipes, and Kentucky Proud marketing materials for agents' use in promoting specialty crops to local consumers by testing a minimum of 20 recipes per semester and developing and disseminating a minimum of ten new recipe cards. For the scope of this grant funding cycle, recipes that serve one or two adults and/or children will be developed. Most of the currently available recipes serve at least 4-8 and we recognize there is a need for healthy recipes appropriate to serve one or two. These recipes will be of particular interest to young adults, older adults, and small families. The recipes will continue to be economical to prepare, will be easy to prepare with a limited number of steps, and will meet MyPlate guidelines.	X	
2	Increase the number of media scripts and demonstration guides developed to support each recipe card by developing one media script and one demonstration guide with talking points on selection, preparation, and storage of featured Kentucky Specialty Crop/recipe by a minimum of ten new scripts and guides. Marketing of the recipe cards is recognized as a significant factor in their use and effectiveness in increasing specialty crop sales and recipe preparation. To this end, development of educational and marketing materials for use by FCS Extension agents, producers, and other collaborators is essential to the success of the project. The number and quality of media scripts and marketing guides has increased and improved each year of the project.	X	
3	Increase consumer awareness and knowledge of selection, preparation, and storage of Kentucky Specialty Crops through dissemination of a minimum of 60 of each recipe card per county (91,000). Agents will survey a representative sample of recipients of the recipe cards to determine if knowledge and awareness of the use of the Kentucky specialty crop had increased by 20% from the level before distribution of the recipe cards.	X	
4	Stimulate consumer spending for Kentucky Specialty crops by demonstrating the project recipes in a minimum of 75 counties at Extension events, Farmers markets, and grocery stores. Students will survey a representative sample of participants to determine if 10% of the consumers purchased the Kentucky specialty crop after receiving the recipe card and viewing the demonstration. Based on our data collected over the past four years, we expect that following distribution of recipes cards, over 50% of consumers will probably or definitely purchase the specialty crop commodity(ies) highlighted in the recipe card.	X	

5	<p>Research the effectiveness of the overall project by collecting, analyzing, and preparing reports using evaluation data collected for the grant period:</p> <p>a. <i>FCS Agent surveys</i>. Using Qualtrics technology agents will be surveyed on recipe card use, producer and consumer responses to recipe cards, and outcomes to educational programs as a result of project participation.</p> <p>b. <i>Specialty Crop Producers</i>. FCS Agents in five pilot counties will identify a representative sample of specialty crop producers selling at local farmers' markets. The producers will participate in a pre and post survey and/or focus group to gauge the difference in sales of product before and after distribution of the recipe cards.</p>	X	
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Goals and Outcomes Achieved

#	Accomplishment or Impact	Objective
1	<p>Goal is exceeded with 23 recipes incorporating locally-grown specialty commodities tested in Fall 2016 and 20 recipes tested in Spring 2017 (total recipes tested = 43).</p> <p>Fall and spring recipes were all evaluated by an 8-10 person taste testing panel recruited through the UK Food Innovations Center. Each tasting panel included at least two FCS Extension agents. Taste tester feedback was provided through sensory evaluation scoring using I-pads provided at the testing. Feedback from the panel was then used in determining which recipes would be tested in the community for recipe card distribution.</p> <div style="display: flex; justify-content: space-around;">   </div>  <p>The <i>PIUKP</i> statewide committee met in December, 2016 and May, 2017 to select the recipes that were further tested in the</p>	<p>Objective 1: Increase the number and scope of recipes, and Kentucky Proud marketing materials for agents' use in promoting specialty crops to local consumers by testing a minimum of 20 recipes per semester and developing and disseminating a minimum of ten new recipe cards. For the scope of this grant funding cycle, recipes that serve one or two adults and/or children will be developed. Most of the currently available recipes serve at least 4-8 and we recognize there is a need for healthy recipes appropriate to serve one or two. These recipes will be of particular interest to young adults, older adults, and small families. The recipes will continue to be economical to prepare, will be easy to prepare with a limited number of steps, and will meet MyPlate guidelines.</p>

#	Accomplishment or Impact	Objective
	<p>community. This selection was based on the on-campus taste tester feedback.</p> <p>Fourteen new professional recipe cards were developed, printed, and distributed to FCS Extension agents in all 120 counties of Kentucky as well as on the University of Kentucky campus, at special events (e.g. Kentucky State Fair), and for recipe sampling/surveying.</p> <p><u>New Recipe Cards Developed and Printed</u></p> <ul style="list-style-type: none"> Butternut Squash Health Bars Cauliflower on the Side Creamy Cucumber and Chicken Salad Eggplant Parmesan Fall Spiced Pumpkin Bread Gluten Free Peach Blueberry Muffins GrilledPepper and Portabella Mushroom Sandwich Jalapeno Poppers Peach Crisp Potato Broccoli Soup Super Crunchy Salad Sweet and Spicy Butternut Squash Tomato Basil Salad Yummy Sweet Potato Casserole 	
2	<p>Media scripts and demonstration guides were developed for each of the 14 recipe cards printed through the grant activities. Each professional media script and demonstration guide was developed by an experienced FCS Extension agent team with feedback from <i>Plate It Up! Kentucky Proud</i> steering committee members. All media scripts and demonstration guides are posted on the University of Kentucky College of Agriculture, Food, and Environment internal website - http://www2.ca.uky.edu/hes/fcs/plateitup/.</p>	<p>Objective 2: Increase the number of media scripts and demonstration guides developed to support each recipe card by developing one media script and one demonstration guide with talking points on selection, preparation, and storage of featured Kentucky Specialty Crop/recipe by a minimum of ten new scripts and guides. Marketing of the recipe cards is recognized as a significant factor in their use and effectiveness in increasing specialty crop sales and recipe preparation. To this end, development of educational and marketing materials for use by FCS Extension agents, producers, and other collaborators is essential to the success of the project. The number and quality of media scripts and marketing guides has increased and improved each year of the project.</p>

#	Accomplishment or Impact	Objective
3	<p>Recipe cards for each of the 14 new recipes were distributed to all counties (250 per county) in the state of Kentucky. Additional recipe cards were also distributed at specialty activities on the University of Kentucky campus, including the weekly UK Farmers Market and student-led educational programming, and throughout the state of Kentucky. For example, cards were distributed as part of several UK research projects, including the Superfund Project (printed through NIH funding).</p> <p>FCS Extension agents showcased the <i>PIUKP</i> project at the Kentucky State Fair in August, 2017. Agents demonstrated preparation of select PIUKP recipes to thousands of fair visitors while providing education on the selection and nutritional value of Kentucky-grown specialty crops. As well, samples of the Cucumber, Corn, and Bean Salsa recipe were included as part of the breakfast options at the Commodity Breakfast at the Kentucky State Fair. Recipe cards and other promotional items were also distributed at the breakfast.</p> <div style="display: flex; justify-content: space-around;">   </div> <p>The graduate research assistant for the project continued to provide samples and educational materials weekly at the on-campus Farmer's Market at the University of Kentucky. The market ran mid-May through mid-August in 2017.</p> <p>The consumer website has been updated and modernized with all PIUKP recipes. The website –http://plateitup.ca.uky.edu provides recipe information as well as educational materials about selecting specialty crops and using, storing, and preserving such specialty crops.</p>	<p>Objective 3: Increase consumer awareness and knowledge of selection, preparation, and storage of Kentucky Specialty Crops through dissemination of a minimum of 60 of each recipe card per county (91,000). Agents will survey a representative sample of recipients of the recipe cards to determine if knowledge and awareness of the use of the Kentucky specialty crop had increased by 20% from the level before distribution of the recipe cards.</p>

#	Accomplishment or Impact	Objective
	<p>Study personnel have worked with FCS Extension associates to survey farmers market patrons on their knowledge, awareness, and use of Kentucky specialty crops.</p> <p>The following peer-reviewed abstracts were presented on the <i>PIUKP</i> project at professional conferences. These conferences include the Society for Nutrition Education & Behavior Annual Meeting in Minneapolis, MN and the Academy of Nutrition and Dietetics Annual Meetings in Chicago, IL and Washington DC.</p> <p><i>Umaima A, Cupp M, Houliban J, Galanika T, and Stephenson T. Recipe Sampling and Recipe Card Distribution at Farmer's Markets Positively Correlated with Intent to Prepare Recipes Using Locally Grown Fruits and Vegetables. 2018 Society for Nutrition Education and Behavior Annual Meeting, Minneapolis, MN, USA.</i></p> <p><i>Oo TNS (Kendra), Hege A, Brewer D, Gamboa L, Serra L, and Stephenson T. Summer Gleaning: Providing Education and Healthy Meals to Food Insecure Children. 2017 Academy of Nutrition & Dietetics FNCE Annual Meeting, Chicago, IL, USA.</i></p> <p><i>Brewer D, McHugh K, Koempel A, and Stephenson TJ. Walking Program with Vouchers Increased HDL Cholesterol Among Appalachians. 2018 Academy of Nutrition & Dietetics FNCE Annual Meeting, Washington DC, USA.</i></p> <p>The following peer-reviewed articles related to the project have been published.</p> <p><i>Brewer D, Dunn K, Gaetke L, Stephenson TJ. Older Adults' Perception of Nutrition Being Protective Against the Detrimental Health Effects of Environmental Pollution. 2017 Journal of Extension 55(4):1-8.</i></p>	

#	Accomplishment or Impact	Objective
	<p><i>Liu E, Stephenson TJ, Houliban J, Gustafson A. Marketing Strategies to Encourage Rural Residents of High-Obesity Counties to Buy Fruits and Vegetables in Grocery Stores. 2017 Preventing Chronic Disease 14:170109.</i></p> <p><i>Breuer D, Dickens, E, Humphrey A, Stephenson TJ. Increased Fruit and Vegetable Intake Among Older Adults Participating in Kentucky's Congregate Meal Site Program. 2016 Journal of Educational Gerontology 42(11):771-774.</i></p> <p>Data has been collected from FCS Extension agents through the UK CES impact reporting system (Results provided in Appendix A).</p> <p>In conjunction with the data collection described above, students and agents surveyed farmers market and/or supermarket consumers to determine if 10% of the consumers purchased the Kentucky specialty crop after receiving the recipe card and viewing the demonstration (Results provided in Appendix B).</p>	
4	<p>Data was collected from FCS Extension agents through the UK CES impact reporting system. A total of 93 counties reported demonstrating the PIUKP project through a variety of events, farmers market activities, and grocery store demonstrations.</p> <p>Consumer survey data was collected at farmers markets during Summer 2018. A summary of the results are provided here and details are provided in Appendix B.</p> <p>Trained graduate research assistants from the Department of Dietetics and Human Nutrition visited and surveyed consumers at nine different farmers markets across Kentucky during the peak farmers' market season (June – August 2018). A collective sample of 300 participants was surveyed at Fayette County (n=19), Hardin County</p>	<p>Objective 4: Stimulate consumer spending for Kentucky Specialty crops by demonstrating the project recipes in a minimum of 75 counties at Extension events, Farmers markets, and grocery stores. Students will survey a representative sample of participants to determine if 10% of the consumers purchased the Kentucky specialty crop after receiving the recipe card and viewing the demonstration. Based on our data collected over the past four years, we expect that following distribution of recipes cards, over 50% of consumers will probably or definitely purchase the specialty crop commodity(ies) highlighted in the recipe card.</p>

#	Accomplishment or Impact	Objective
	<p>(n=52), Jefferson County (n=42), Knox County (n=22), McCracken County (n=22), Montgomery County (n=40), Owsley County (n=37), Pike County (n=37), and Trigg County (n=24). Sampling was conducted in collaboration with the FCS Extension agents at respective counties, who prepared and provided a PIUKP recipe sample at the markets. The market locations were diverse in geographic location, the number of producers, the type of market, and the consumer population.</p> <p>Across the nine markets (n=300) surveyed, 42.6% of consumers had already tried a PIUKP recipe at least once at the market before. When asked if they normally tried samples at a farmers' market and/or a grocery store, 40.3% answered they tried it frequently, while 48.0% reported trying them sometimes. Similarly, in terms of taking recipe cards, 40.3% of all participants reported frequently taking recipe cards whenever provided, while 47.7% took them sometimes. Participants were asked to rate their overall impression of the PIUKP sampled recipe (1=poor flavor and 10=loved it) and the average score was 8.84 ± 1.62.</p> <p>Consumers were asked "<i>Does sampling at the FM contribute to your plan to make the sampled recipe (1=sampling contributes none and 10=sampling contributes a lot)?</i>" The average score was 7.94 ± 2.26, indicating that sampling of PIUKP recipes does contribute to making the sampled recipe at home. As well, consumers were asked "<i>Do recipe cards at the farmers market contribute to your plan to make the recipe (1=cards contributed none and 10=cards contribute a lot)?</i>" The average score was 7.86 ± 2.30, indicating recipe cards for PIUKP recipes do indeed contribute to making recipes at home.</p> <p>Of the consumers served at the farmers markets, 83.8% indicated that, as a result of the sampling, they planned on purchasing the</p>	

#	Accomplishment or Impact	Objective
	<p>highlighted commodity (differed based on recipe) at the farmers market that day. The surveyed sample was also asked to self-report their daily produce consumption. Nearly 52% of the participants reported consuming at least 5 or more servings of fruits and vegetables daily. Average daily fruit intake was 2.06±1.15 servings and average daily vegetable intake was 2.86±1.72 servings.</p>	
5	<p>Data from FCS agent survey and project reports is provided in the previous section. FCS Extension agents were surveyed through the UK CES impact reporting system and provided information on recipe card use, producer and consumer responses to recipe cards, and outcomes to educational programs as a result of project participation (See details in Appendix A). Overall, for the UK CES report, 496 vendors reported increased sales at markets where PIUKP recipe cards were tested or distributed and there was a \$22,124 in increased sales associated with PIUKP recipes being sampled or cards distributed at the farmers market.</p> <p>During summer 2017, 28 producers completed anonymous surveys related to the <i>Plate It Up! Kentucky Proud</i> project. 64% of producers had heard of <i>Plate It Up! Kentucky Proud</i> 54% of producers reported they had seen <i>Plate It Up! Kentucky Proud</i> recipe cards in person 46% of producers reported they had tasted a sample of a <i>Plate It Up! Kentucky Proud</i> recipe (most often samples that had been prepared and distributed by the FCS Extension agent in the county) 54% of producers reported that <i>Plate It Up! Kentucky Proud</i> recipe cards and/or samples have been distributed at the market where they sell. As well, 29% of the producers were unsure of whether the cards/samples had been distributed at their local market.</p>	<p>Objective 5: Research the effectiveness of the overall project by collecting, analyzing, and preparing reports using evaluation data collected for the grant period:</p> <p>a. <i>FCS Agent surveys</i>. Using Qualtrics technology agents will be surveyed on recipe card use, producer and consumer responses to recipe cards, and outcomes to educational programs as a result of project participation.</p> <p>b. <i>Specialty Crop Producers</i>. FCS Agents in five pilot counties will identify a representative sample of specialty crop producers selling at local farmers' markets. The producers will participate in a pre and post survey and/or focus group to gauge the difference in sales of product before and after distribution of the recipe cards.</p>

#	Accomplishment or Impact	Objective
	<p>100% of producers indicated that they believe that having <i>Plate It Up! Kentucky Proud</i> recipe cards at the market increases <u>consumer interest</u> in the featured commodities</p> <p>100% of producers indicated that they believe that having <i>Plate It Up! Kentucky Proud</i> recipe cards at the market increases <u>sales</u> in the featured commodities</p> <p>Sample comments from the producers:</p> <ul style="list-style-type: none"> • Recipe cards help sell more specific vegetables or fruit • Gives customers ideas about how to use your product • Conversation with customers • Provides conversation with the customer, gives customers a new way to create a delicious dish • Selling more • Allows customers a recipe to try new produce • Helps sell product • They encourage customers to purchase more and different products • Most recipes are simple with common ingredients and tend to be low fat and basically healthy 	

#	Challenge or Development	Corrective Action or Project Change
1	<p>The PIUKP project reach has expanded due to incorporation in additional outreach, research, and teaching activities. For example, PIUKP recipes are incorporated as part of the NIH-funded Superfund project led by Dr. Dawn Brewer in the Department of Dietetics and Human Nutrition. As well, PIUKP recipes are incorporated in grant-funded work in Whiteburg, KY. The project incorporates incentives to promote physical activity (walking the Tanglewood Trail) and consumption of fruits and vegetables</p>	<p>Project Action: PIUKP recipe cards and associated programming has led to increased grant funding (from other sources), enhanced teaching, and been incorporated as part of experiential learning activities provided through the University of Kentucky.</p>

#	Challenge or Development	Corrective Action or Project Change
	purchases at the Letcher County farmers market, which is at the end of the trail. PUIKP recipe samples and cards are also regularly included has part of meal distribution with the Campus Kitchen at the University of Kentucky.	

Beneficiaries

Number of project beneficiaries:.....100,000

#	Goal	Quantifiable Results
1	Of the 100,000 total adults reached: 50,000 (50%) will report an intention to eat more specialty crops (based on surveying of representative sample of 300 consumers at farmers markets)	83.8% of consumers reported an intention to eat more specialty crops
2	Number of new specialty crops and/or specialty crop products introduced to consumers – 20 new recipes tested on campus by DHN students and 10 new recipes fully developed into professional recipes cards and disseminated b. Number of recipe cards printed and disseminated throughout Kentucky - a minimum of 60 of each recipe card will be professionally printed and distributed per county (91,000 total recipe cards printed and disseminated)	43 recipes tested 14 new recipe cards developed into professional recipe cards and disseminated 441,000 total recipe cards distributed (31,500 cards per each of the 14 recipes)
3	Of the approximate 100,000 total consumers reached, b. 50,000 (50%) will report the intention to access, prepare, and/or preserve specialty crops (based on surveying of representative sample of 300 consumers at farmers market)	83.8% of consumers reported an intention to eat more specialty crops after sampling a PIUKP recipe at the farmers market 84.0% of consumers reported an intention to eat more specialty crops after receiving a PIUKP recipe card at the farmers market
4	Number of media scripts and demonstration guides developed to support each recipe card	

protocol approved by the University of Kentucky Institutional Review Board. Trained graduate students conducted the survey research in conjunction with PIUKP recipe sampling by Extension agents at farmers markets throughout the state. Adult consumers at the farmers market were invited to participate in the study and surveying was done for 2-3 hours at each farmers market. Paper survey data was entered in Excel and descriptive data generated. Inferential statistics were generated using *SAS University Edition*.

Lessons Learned

1. In addition to distribution of printed recipe cards and in-person recipe demonstrations, social media provides a unique opportunity to reach a large number of consumers and producers across the state of Kentucky. The *Plate It Up! Kentucky Proud* Facebook page has expanded and now includes not only photos and recipes, but also numerous videos demonstrating recipe preparation. These videos have been well-received by consumers and producers. Producers can share the *Plate It Up! Kentucky Proud* posts to their own social media accounts, thus promoting interest in their specific commodities.
2. The project successfully engages the three missions of a land-grant institution – research, teaching, and outreach. As such, the project has been recognized for excellence at the University, state, and national level. The PIUKP steering committee recognized the need to have a PIUKP administrative committee to guide strategic planning and goal setting for the project as it continues to grow. That committee meets bi-annually.
3. We continue to be challenged by the need to engage producers in the evaluation of the project. Producers are enthusiastic about the recipe cards and project but, due to their busy schedules, having time to answer survey questions can be a challenge. As such, we are working more strategically with partners and Extension Horticulture Agents to better engage producers in the evaluation component of the project. This grant cycle, Sharon Spencer with the Kentucky Department of Agriculture was instrumental in recruiting producers to complete the producer survey. Having a strong partnership with KDA has allowed us to reach more producers, which has added value to this project.
4. *Plate It Up! Kentucky Proud* has become well-recognized by the students and alumni in the Department of Dietetics and Human Nutrition, as well as throughout the College of Agriculture, Food, and Environment. Many programming efforts, including those by the Campus Kitchen at the University of Kentucky have used PIUKP recipes as part of their work in the community. As well, our alumni are reporting that they are using PIUKP recipes in their work throughout the United States. Given the longevity of the project, we now have hundreds of alumni who worked on recipes for this project and who use the tools provided in their own work.

Expenditures

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel	\$14,546	\$15,696.74
Fringe Benefits	\$3,225	\$2,209.27
Travel	\$3,370	\$4,782.85
Equipment	--	--
Supplies	\$1,200	\$900.00
Contractual	--	--
Other	\$23,114	\$21,811.24
Direct Costs Sub-Total	\$45,455	\$45,400.10
Indirect Costs	\$4,545	\$4,599.90
Total Federal Costs	\$50,000	\$50,000

PROGRAM INCOME (IF APPLICABLE)

NOT APPLICABLE.

Source/Nature (i.e., registration fees)	Amount Approved in Budget	Actual Amount Earned
1.		
2.		
3.		
Total Program Income Earned		

Use of Program Income

Describe how the earned program income was used to further the objectives of this project.

NOT APPLICABLE

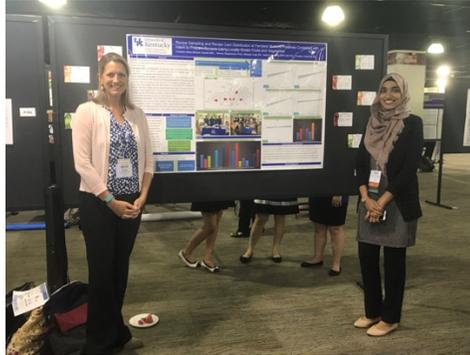
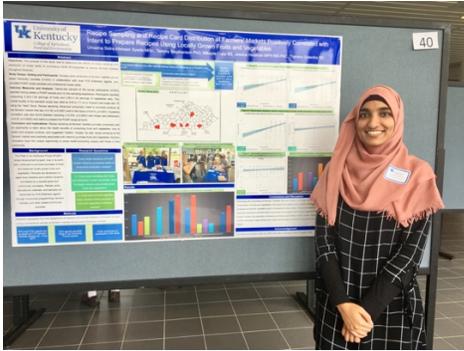
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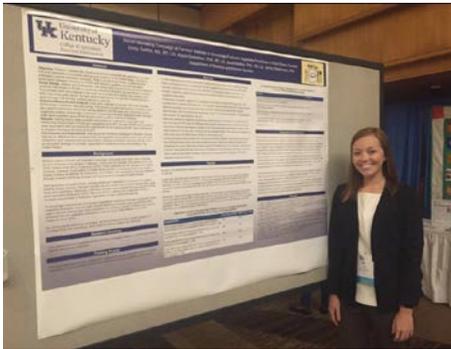
Additional Information (Optional)

Presentation of PIUKP at National Conferences

Umaima Sidra Afsheen Syeda, Graduate Student in the Department of Dietetics and Human Nutrition, presented research about the project at the Barnstable Brown Obesity and Diabetes Research Day in May, 2018 in Lexington, KY. As well, Tammy Stephenson (Project PI) and Afsheen presented on the project at the Society for Nutrition Education and Behavior (SNEB) annual meeting in July, 2018 in Minneapolis, MN.



Emily DeWitt, Graduate Student in the Department of Dietetics and Human Nutrition, presented research about the project at the Society for Nutrition Education and Behavior (SNEB) annual meeting in July, 2017 in Washington DC. The title of her project was “Social marketing campaign at farmers’ markets to encourage fruit and vegetable purchases in rural obese counties.”



Recipe Sampling and Presentations at the 2017 Kentucky State Fair



FCS Extension Agents provided educational materials and cooking demonstrations at the 2017 Kentucky State Fair. As well, the PIUKP Cucumber, Corn and Bean Salsa recipe was prepared for sampling at the Commodity Breakfast and recipe cards distributed.

APPENDIX A: 2017-2018 FCS Extension Agent Priority Indicator Report

Major Program – Plate It Up! Kentucky Proud

- Days Reported –542.125
- FTE – 2.378
- Days Multi – States – 1.625
- Total Contacts – 37,767
- White – 31,269
- Black – 819
- Asian – 112
- American Indian – 20
- Hawaiian - 6
- Could not determine – 2,087
- Other - 159
- Non - Hispanic – 33,863
- Hispanic – 609
- Male – 13,412
- Female – 24,355
- Adult Volunteers – 505
- Youth (18 & under) – 8,612
- Indirect (newsletter, radio, TV, etc.) – 496,986

- 2061.1) 20485 Number of individuals more likely to buy a Kentucky fruit or vegetable as a result of tasting a Plate It Up! Kentucky Proud recipe sample
- 2061.2) 18081 Number of individuals more likely to buy a Kentucky fruit or vegetable as a result of receiving a Plate It Up! recipe card
- 2061.3) 10128 Number of individuals who indicated that they purchased the fruits and vegetables featured on the Plate It Up! recipe card
- 2061.4) 9132 Number of individuals who reported an increase in their fruit and/or vegetable consumption
- 2061.5) 3717 Number of individuals who reported consuming at least 4-6 servings of fruits per day after participating in Plate It Up! Kentucky Proud activities
- 2061.6) 3806 Number of individuals who reported consuming at least 4-6 servings of vegetables per day after participating in Plate It Up! Kentucky Proud activities

2061.7)	496	Number of vendors reporting increased sales at markets where Plate It Up Kentucky Proud recipes are tasted or recipe cards distributed
2061.8)	22124	Dollar value of vendor-reported increased sales associated with Plate It Up Kentucky Proud recipes tasted or cards distributed

2017-2018 FCS Extension Agent Success Stories

KENTON COUNTY SUCCESS STORY:

The city of Ft. Mitchell-located in Kenton County, Kentucky has a “Live Well” Coalition group, with a mission that includes providing a variety of programs to its citizens to promote overall wellness. This summer, the city started their own community garden adjoining their city building. The Kenton County Family and Consumer Sciences Extension Agent was asked to come and provide a program for the citizens on how to prepare various food items from the garden. Program attendees consisted of 13 young and middle aged mothers. The “Plate it Up” Kentucky Proud program was the focus of the program. The agent demonstrated 4 recipes and discussed the nutritional value, use and care of the featured summer foods.

Post program surveys found that 92% of participants felt the recipe cards and taste test contributed to their plan to try at least one of the recipes at home. In addition, nearly all participants reported planning to increase their consumption of fruits and vegetables. Participants reported learning new information regarding organic foods, correct cleaning of produce, and using a food thermometer correctly.

As a result of this program, one of the coalition members who also serves on the wellness committee for a local accounting business contacted the FCS Agent. After meeting, a survey was developed for the employees to determine a healthy eating lesson format. They decided to do a “hands on” workshop featuring healthy Mediterranean dishes. After the lesson, 89% of participants planned to implement at least one of the Mediterranean diet suggestions to improve their health. These programs introduced Cooperative Extension to many new clientele.

PIKE COUNTY SUCCESS STORY:

The Pike County Family & Consumer Sciences program has worked cooperatively with the Pikeville Farmer’s Market and our Agriculture & Natural Resources program to provide Plate It Up: Kentucky Proud recipe samples during the 2017 market season. Kentucky adults rank among the 10 highest for poor consumption of fruits and vegetables. Locally grown produce can provide an important access point for fresh fruits and vegetables for a healthy diet. Research shows that consumers are more likely to purchase fruits & vegetables they may be less familiar with if they taste them and understand how to utilize & store them. The PIUKP recipes feature in-season Kentucky produce prepared in new and exciting ways.

Over the 2017 Pikeville Farmer’s Market season, our sampling and recipe promotion activities reached over 5,000 market shoppers. Market shoppers also received Kentucky produce availability guides, nutrition reinforcement items (vegetable peelers/scrubbers, grocery lists, paring knives) to aid in the preparation of their purchases. Our FCS team’s presence at the market also engaged shoppers in questions about food safety, food preservation, recipe adaptation & other topics. Market shoppers report purchasing ingredients and preparing the PIUKP recipes and increasing their consumption of local fruit & vegetables.

CALDWELL COUNTY SUCCESS STORY:

The Center for Disease Control reports that 33.2% of Kentucky residents are obese, 46.2% consume fruit less than 1 time per day and 24.9% consume vegetables less than 1 time per day. Kentucky adults rank among the ten highest for poor consumption of fruits and vegetables. The most recent Kentucky County Healthcare Profile report concluded that 34.8% of Caldwell County residents are obese. It is evident that lifestyle changes such as eating healthier diets are needed. Locally grown produce can provide an important access point for fresh fruits and vegetables needed for a healthy diet.

In an effort to encourage Caldwell County residents to eat more fruits and vegetables, the Family & Consumer Sciences Agent collaborated with the Farmers Market vendors to provide consumers with free samples of recipes from Plate It Up Kentucky Proud during the market season. The Family & Consumer Sciences Agent set up a booth during six market days to provide a variety of healthy recipes and nutritional information for consumers and was available to answer numerous questions concerning maintaining a healthy diet. Recipes sampled included Cucumber, Corn, and Bean Salsa, Fiesta Potatoes, Bacon & Tomato Dip, Green Beans with Feta Cheese, Blueberry Cream Cheese Pound Cake, and Very Berry Salsa. Additional recipes provided included Smashed Potatoes, Zippy Zucchini Cakes, Fresh Green Bean Stir Fry, Broccoli Chowder, and Summer Veggie and Wild Rice Bake. 286 consumers sampled the various recipes and received the recipes and/or nutritional information. 95 % indicated that they liked at least one of the recipes and had plans to try the recipe at home.

MARTIN COUNTY SUCCESS STORY:

Martin County presented Plate it up! Kentucky Proud to 200 total participants. After the program, all participants increased their knowledge of retail outlets for locally grown food commodities; all 200 increased their knowledge regarding how the Plate it up! Kentucky Proud program is a consumer education partnership. 50% of participants who answered question expressed aspirations to try a Plate it up! Kentucky Proud recipes. 50% of participants indicated plans to prepare and/or preserve locally grown commodities. The Plate it up! Kentucky Proud program can potentially demonstrate positive change in both knowledge and behavior. Increasing the consumption of fruits and vegetables has the potential to save an money in health care costs. With 200 individuals participating in Plate it up! Kentucky Proud Martin County increased fruit and vegetable consumption and nutrient knowledge of fruit/vegetables in specific Plate It Up! Kentucky proud recipes.

MONTGOMERY COUNTY SUCCESS STORY:

As a way to increase customers at the Montgomery County Farmers Market, the Montgomery County FCS Agent worked with market vendors and the ANR Agent to attract customers in a new way. The FCS agent distributed a survey at the market vendor informational meeting prior to the selling season. Vendors filled out what produce they would have the most of that summer. With that information, FCS Agent chose Plate It Up! Kentucky Proud recipes using the produce farmers indicated they planned to sell in the season. Four separate dates during the season, the FCS agent presented a food demonstration and handed out Plate It Up! Kentucky Proud samples to customers. The dates were well advertised through newsletters, newspapers, social media outlets, etc. Produce from the recipes were either bought or given to the agent by local famers. Vendors reported increased sales of produce that was demonstrated that day and even weeks after. Recipe demonstrations and sampling will now occur during farmer's market season to further promote local produce consumption and the Montgomery County Farmers Market.

HICKMAN COUNTY SUCCESS STORY:

The Hickman County Farmers Market, the Fiscal Court of Hickman County, Rotary Park Committee and the Hickman County Extension Office collaborated, applied, and was awarded the Kentucky Department of Agriculture's Farm to Fork Grant. The Farm to Fork program entailed a dinner where all ingredients were locally sourced to highlight local farms, farmers, producers, Kentucky Proud products and recipes. The dinner would be an exclusive ticketed event held at the farmers market with the proceeds going to charity. The Hickman County Mission House was the charity to benefit from the event. All ingredients were locally sourced within 45 miles. The meal was prepared by Local Caterers, Bakers and Volunteers. The meal was served by the local FFA and FCCLA students. The volunteer hours contributed to the event were estimated to be valued at \$5130.00.

The Farm to Fork Committee is working together to increase awareness of our local food bank, The Mission House and the Statewide Hunger Initiative. The Mission House serves as a center point of the community and is a heavily utilized resource for many in our area especially for families who experience hunger. They distribute commodities and goods to the individuals and families of Hickman County who have need. They also support the Feeding America program and have an emergency pantry and thrift store. The representatives from Kentucky Department of Agriculture and the County Judge Executive spoke during the dinner about hunger in KY and the new Farmer's Market. The dinner generated \$3,800 for The Mission House which is estimated to produce 11,400 meals for Hickman County Families.



CAMPBELL COUNTY SUCCESS STORY:

According to Kentucky Proud research, buying locally grown produce helps the community by keeping food dollars close to home and it provides individuals with garden fresh taste. The Campbell County 4-H program was approached by three local Girl Scout troops to provide a cooking program that focused on locally grown produce and eating healthy meals. Seven middle and high school youth attended the cooking program. They received instruction on food safety, knife safety, importance of eating fresh vegetables and fruits, and assisted in preparing a Kentucky Proud recipe - Farmer's Market Skillet Bake. They also sampled the dish they prepared as well as a chocolate pumpkin cupcake, another Ky Proud recipe. After the sampling of the skillet bake, four of the seven reported they would definitely try the recipe at home; three of the seven will definitely buy red potatoes as a result of the tasting, and five of the seven plan on increasing the number of vegetable servings they eat per day. Each participant received information about cooking vegetables,

garnishes, knife use, and recipe cards. As a result of the receiving the recipe cards, over half of the participants plan on buying the vegetables in the recipe and trying the recipe at home.

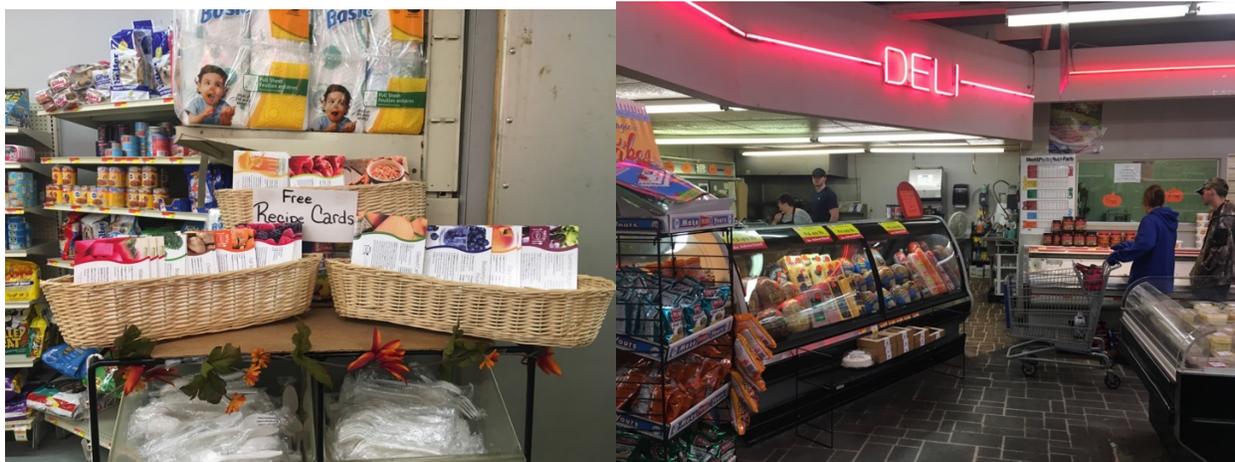
LEWIS COUNTY SUCCESS STORY:

Lewis County ranks fourth among all Kentucky counties for obesity rates with 41.6% of the population currently being overweight or obese and 18.5% of the population experiencing food insecurity. Adding to this problem, 27.0% of individuals in this area are impoverished and when money is short, unhealthy diet and lifestyle choices follow, and the vicious cycle of weight gain continues on.

In an effort to promote shopping local and eating healthy, Plate it Up Kentucky Proud was founded as a partnership project between the University of Kentucky Cooperative Extension Service, the Kentucky Department of Agriculture and the University of Kentucky School Of Human Environmental Sciences. This project provides healthy, great tasting recipes using Kentucky Proud products for the people of Kentucky. Over time these locally produced recipes would keep money in counties all while helping individuals make healthier choices in their diet.

These changes have been very apparent at the local IGA in Tollesboro, KY. Ever since the Lewis County Extension Office began promoting Plate it Up! Kentucky Proud in stores the IGA has completely bought into the idea behind the program. Starting in 2015, the store has been selling various recipes most notably including the cheesy broccoli potatoes, pumpkin apple muffins and broccoli beef stir fry. “We love supporting our local extension office and are always willing to try and expand our options at the deli” said the stores head deli worker. “A lot of our customers are excited by the variety and they will often ask why we don’t have certain recipes all the time! They sell extremely well and we can barely keep the recipe cards in stock”.

According to records since 2015, the store has served approximately 1600 servings of various Plate it Up! Kentucky Proud recipes, netting about \$2000 in profit. Not only are the recipes in high demand, but residents of Lewis County are also inadvertently making wiser choices for their diet and keeping their money local. Overtime these healthier choices will allow individuals to save calories without compromising the flavor of their food, ultimately promoting weight loss and hopes of a lower obesity rate in the future.



TAYLOR COUNTY SUCCESS STORY:

30% to 35% of Kentucky adults are considered obese (CDC Adult Obesity Prevalence Map of 2015) and according to the Kentucky County Healthcare Profiles adults in Taylor County have an obesity rate of 32.9%. Only 4 in 10 Kentucky adults report excellent or a very good diet and 39% of Kentucky adults do not meet either the fruit or vegetable recommendations. The Taylor County Extension Council revealed that direct education in grocery stores utilizing Plate it Up Kentucky Proud was an avenue for impacting change in eating habits. The intent of the Plate It Up Kentucky Proud program is to collectively combat obesity by targeting increased fruit and vegetable consumption through broader access from locally grown Kentucky Proud producers. The Taylor County Family and Consumer Sciences Agent conducted the Plate It Up Kentucky Proud recipe sampling in two grocery stores from July 2017 to April 2018. Over 550 youth and adult consumers sampled Plate It Up Kentucky Proud recipes, gained knowledge of proper nutrition, received recipe cards, and often purchased featured fruits and vegetables to try the recipe at home. Consumers shared the following comments: “I like to find new ways of preparing fruits and veggies”, “It’s better than I thought”, “I love anything Kentucky Proud”, “I’ll make this for my next homemaker’s meeting”, “I never would have thought of preparing a cantaloupe like this; it’s delicious! (talking about the cantaloupe bread)” The Plate It Up Kentucky Proud grocery sampling program made a positive impact on local consumers and brought attention to how healthy choices can be the easy choice when shopping.

CHRISTIAN COUNTY SUCCESS STORY:

Kentucky has the seventh highest adult obesity rate in the nation, according to *The State of Obesity: Better Policies for a Healthier America* released August 2017. Kentucky's adult obesity rate is currently 34.2 percent, up from 21.7 percent in 2000 and from 12.7 percent in 1990. The obesity epidemic threatens the quality and years of life of Kentuckians.

To address this issue, the staff at the University of Kentucky Cooperative Extension Service in Christian County developed a farmer’s market buyers guide to market Extension, provide healthy eating tips, and to feature “Plate It Up!” recipes. Plate It Up! is a joint program between the Cooperative Extension Service, Human Environmental Sciences and the Kentucky Department of Agriculture. The program promotes locally grown commodities and encourages consumers to buy locally. It also has the goal of creating a better, healthier lifestyle and reducing obesity. Agents and assistants prepare Plate It Up! recipes weekly and distribute samples as well as healthy eating information at the Downtown Hopkinsville Farmers Market.

In the 2017 market season, over 1,000 buyer’s guides were distributed to market patrons, the housing authority, the county fair, health fairs, civic groups, the women’s shelter and the senior citizens center. More than 460 people visited the Extension booth and tasted fresh produce cooked using the Kentucky Proud “Plate It Up!” recipes, including 123 African American (27%) and 325 white (71%). Additionally, the market’s Facebook page promotes the recipes and tasting events to over 2,000 followers. Many tasters tried foods they had not tried before. One taster commented that she had made a recipe from the guide for her family and they loved it.

DAVISS COUNTY SUCCESS STORY:

According to the Center for Disease Control adults in the state of Kentucky rank among the 10 highest for poor consumption of fruits and vegetables. Kentucky adult obesity rates also rank among the 10 highest in the United States with 33% of adults in Kentucky reporting a BMI in the obese category. In Daviess County specifically, 30% of adults are classified as obese according to their

BMI. Obesity is one of the main factors associated with poor health and increased risk of health issues in the future.

In an effort to address obesity rates and increase consumption of fruits and vegetables among adults in Daviess County the Daviess County Cooperative Extension Agent for Family and Consumer Sciences hosted a monthly series of “Healthy Cooking” classes in 2016 and 2017. The “Healthy Cooking” series provided participants with the opportunity to prepare and try nutritious Plate It Up KY Proud recipes each month. At each class the participants prepared a dish which incorporated fresh, local, in season produce and then take that dish home with them to share with their family and /or friends.

Over a period of 24 months 25 adults and 5 youth participated in the program. Participants gained knowledge related to cooking skills, proper food safety and storage, and were able to introduce new recipes to their family. Program participants reported the program allowed them to incorporate more fruits and vegetables into their diets and many of them prepared the recipes at home after learning to prepare the recipe during class. One family stated, “This class has allowed us to learn how to cook as a family and try new vegetables we probably would not have tried before. We now purchase a variety of items at the local farmers market to prepare these recipes at home.”

LOGAN COUNTY SUCCESS STORY:

According to assessment data collected through the Centers for Disease Control 1416 grant, Logan County has an obesity rate of 43.5% and Kentucky continues to rank in the top ten most obese states across all ages. In addition, Logan County has a poverty rate of 19.7% and a food insecurity rate of 15.2 %. With these statistics, there are 4,589 individuals receiving SNAP benefits in Logan County and 56% of students in the county are eligible for the school feeding program. These issues must be addressed in order to improve the health and quality of life for the citizens of our community. To address this need in Logan County, Logan County Extension Agent for Family and Consumer Sciences and the Logan County SNAP-Ed Assistant partnered together to offer Logan County residents opportunities to learn more about fresh produce to improve diet, sample healthy recipes and receive the recipe cards for those recipes in hopes to improve their food choices and food insecurity. The Family and Consumer Sciences agent and SNAP-Ed Assistant offered three Plate It Up events during the fall of 2017 at local grocery stores. Each event provided an opportunity for consumers to learn about fresh produce as well as sample a Plate It Up Kentucky Proud recipe using a specific commodity that was in season during that time period and receive the recipe card to accompany that recipe. The Extension Agent also worked with store managers to highlight the particular commodity being used in the recipe for that event. Fifty-seven individuals participated in the events representing a mix of racial, ethnic, age and gender groups. Data received over the course of the program and through a post program survey indicated the following:

79% indicated they were more likely to buy that particular Kentucky fruit or vegetable as a result of tasting the recipe sample

53% indicated that the taste test contributed to their plan to try the recipe at home

88% indicated that the recipe cards would help them evaluate their nutritional needs

In addition to data received through these events we also experienced a personal success story. At one of our Plate It Up events we had a graduate student with us asking individuals to participate in a survey to collect data on fresh produce consumption. In return for completing a survey and providing us a copy of their receipt of purchase they were given a \$25 store gift card. On this particular day a man visited our table requesting to complete a survey in order to receive a gift card

so he could purchase some groceries. He was unaware that he had to make a purchase as well in order to get the gift card. He explained to us that he had no money and the store manager has just bought him a loaf of bread. We told him that if he could get the manager to give him a receipt for the loaf of bread he could complete the survey and get the gift card. He was able to get the receipt so he got a gift card. He was so appreciative of the gift card and immediately began carefully grocery shopping for the exact items his family needed for that amount of money. In the meantime, a shopper that knew of the situation decided to turn in her receipt of purchase, complete a survey and asked us to give him her gift card. When we gave him the second gift card he broke down in tears in the store while he was shopping. After he checked out with all of his groceries he came back to our table and thanked us repeatedly in tears for providing for him that day. He had come to the store with no money for groceries, was going to leave with only a loaf of bread, but instead was able to purchase \$50 in groceries for his family.

CARROLL COUNTY SUCCESS STORY:

To introduce myself as the new County Agent for Family and Consumer Sciences, the Lunch and Learn program was started in May of 2017 as a bi-monthly program held at the local extension office. To accommodate working people, Lunch and Learn is a hourly program that meets from noon to 1:00 pm.

The program consist of recipe tasting, information about nutrition, demonstrations, and locally grown commodities. Recipes are usually taken from the Plate It Up recipe file, with the main ingredient focusing on Farmers Market produce. Discussing fruits and vegetables has encourage participants to shop the local Farmers Market. By sampling the Plate It Up recipes, participants said they are more willing to try that particular ingredient and try making the recipe at home.

All participants said they have increased their intake of vegetables and have made at least one recipe at home. One participant said she is now eating blueberries since having the opportunity to taste them in several recipes.

Attendance averages 14 people per session. These include one Hispanic who has become a homemaker member and three Peruvians. Several volunteers have taught the Lunch and Learn session including the ANR agent, two males and two females. One Hispanic female taught how to make Tamales.

UNION COUNTY SUCCESS STORY:

Kentucky adults rank among the 10 highest of poor consumption of fruits and vegetables, according to the Center of Disease Control. Individuals who consume adequate amounts of fruits and vegetables tend to avoid chronic diseases as they age. The “Plate It Up! Kentucky Proud” program was created to promote Kentucky grown products and markets to encourage an increase in fruits and vegetables consumption.

The Union County Family and Consumer Sciences Agent offered “Simply Cooking” Plate It Up! Kentucky Proud” to Union County residents. These 4 hands-on cooking classes offered participants the opportunity to prepare six different recipes and evaluate them. Nutrition educational material was provided to participants as well as recipes and cooking tips.

After the program, 100% said they were likely to purchase products to make these recipes at home. A mother/daughter program participant expressed their new found likeness for asparagus. The mother stated that she and her daughter are now eating asparagus and they had not tried it previously. The “Asparagus Ham Quiche” was one of the favorites of many of the participants

PULASKI COUNTY SUCCESS STORY:

More than 200 people have sampled Plate In Up and Kentucky Proud Recipes in Pulaski County. All of the recipes served have received positive comments. Through using such a variety of recipes, and using foods available to them at the Farmers Market and local grocery stores, clients have learned how to serve greens, such as Brussel sprouts, chard, kale, Napa cabbage and other greens, in salads, soups, muffins, and other dishes, and not just as a vegetable dish. The clients state they are more likely to buy products available at the market and grocery store after sampling the product, or finding a recipe card which tells them how to use the products being offered. The participants also indicate they are buying and serving more fresh vegetables instead of buying the products in a can.

ROWAN COUNTY SUCCESS STORY:

Rowan County has a population of 20,898 as of 2010 census, 3057 (15%) are seniors that are 55 or older. 18 % of the seniors live in poverty in Rowan County and have limited access to fresh produce. FCS Agent initiated a program called Grow Your Vitamins with goal of increasing the consumption of fruits and vegetables.

Extension partnered with the Rowan County High School FFA, Maysville Community College Agriculture Department and Morehead State University farm to provide sweet potatoes to the Rowan County senior citizens.

Extension taught FFA students about the sweet potato production and the nutritional value. Over 66 pound bags of sweet potatoes were distribute to seniors at Heritage Place, a senior apartment complex in Morehead. Each bag includes 5 pounds of sweet potatoes valued at \$6.50 each. Sweet potato and seasonal vegetable culinary classes were taught to the community at City Park.

FCS Agent and the FFA Members will grow free of charge sweet potatoes for Rowan County Senior Citizens each year. Recruited to the program were Rowan County FFA Advisor/Instructor, Maysville Community College Ag Instructor, Morehead State University Farm and FFA Members. Two rows of sweet potatoes were planted and harvested totally 66 bags. During the pilot program, everyone learned to give back to their community, reduce hunger, plant science, nutrition, working as a team and identify one of the healthiest vegetables. During distribution day the FFA members wore their official attire and proudly gave out the bags to the first 66 seniors that lined up, the members also assisted Heritage Place to deliver the commodes that month to the senior apartments and/or vehicle. 2018-2019 will be the second year for this program; MSU has agreed to give us the use of four 200-foot rows for planting our potatoes. When speaking to the group of students that helped make this possible, the following was access.

100% of the FFA Members learned an important lesson of giving back to our seniors that have given so much to them

100% develop pride of working for others free

100% learned about growing sweet potatoes in quantity

CUMBERLAND COUNTY SUCCESS STORY:

According to the Center for Disease Control and Prevention, Kentucky adult obesity ranks among the 10 highest and among the 10 highest for poor consumption of fruits and vegetables in the US. Kentucky youth also rank among the 10 highest for obesity in the US. In an effort to bring awareness to and improve these statistics, the Cumberland County Family and Consumer Sciences Agent partnered with the Cumberland County High School Culinary Arts teacher. The goal was to teach the students how to properly prepare recipes from the Plate it Up! Kentucky Proud curriculum which featured fresh produce that could be purchased locally. The students prepared the recipes and set up a sampling station for high school staff to try the recipes. The students also sampled the recipes. Each staff that participated in the tasting, completed an evaluation. A total of twenty-three

staff and twelve student volunteers participated in the series. Confetti Chicken Quesadillas were the overall staff favorite. Pumpkin Apple Muffins were the overall student favorite. Upon evaluation of the program series, it was found that a large majority (83.75%) of those that sampled the recipe stated that they planned to try the recipes at home. Furthermore, 67% stated that they were more likely to buy fresh spinach and fresh apples based upon the tasting/recipe card. 90% stated that they were more likely to purchase summer squash and red or yellow bell peppers based upon the sampling/recipe card.

FAYETTE COUNTY SUCCESS STORY:

Plate It Up! Kentucky Proud provides healthy, great tasting recipes using Kentucky Proud products in order to increase consumer purchase, preparation, and preservation of Kentucky grown and value-added commodities, through marketing and educational collaborations. The project is a Family and Consumer Sciences Extension driven partnership with the School of Human Environmental Sciences and the Kentucky Department of Agriculture. Since 2011 over 1M recipe cards and hundreds of programs have informed local citizens of the availability and nutritional value of locally grown commodities. Fayette County FCS Extension partnered with Lexington-Urban County Government and local CSAs (Community Supported Agriculture) contracted to service 50 LFUCG employees. Plate It Up! Kentucky Proud recipes were appropriately matched with cards provided for weekly produce deliveries. Additional recipes were provided to CSA customers in a weekly newsletter.

Post surveys from all 50 participants provided the following data:

50% of employees utilized one or more Plate It Up! Kentucky Proud resources

52% prepared at least one meal featuring Plate It Up! Kentucky Proud recipes with 24% preparing 4 to 10+ different recipes.

56% of employees found the Plate It Up! Kentucky Proud tasting held during CSA pick-up helpful.

92% of employees were **not** aware of Plate It Up! Kentucky Proud recipes prior to contracting with their CSA.

The following responses indicate the benefits received from receiving Plate It Up! Kentucky Proud recipes:

- Received foods we have never used or heard of with helpful recipes.
- I learned the proper method for storing vegetables and fruits.
- Having these recipes and instructions not only allowed me to cook those recipes but gave me a familiarity with how to process those unfamiliar ingredients so I could incorporate them into other dishes.
- Became more educated on nutrition
- Helpful to have recipes when it is a veggie that I do not normally buy. I learned how to store different foods to lengthen the storage life, and I tried a lot of new recipes.

ELLIOTT COUNTY SUCCESS STORY:

Elliott County FCS has promoted Plate It Up, Kentucky Proud since its inception. This year we are taking it to a higher level by challenging local citizens to use the recipes. To combat the obesity epidemic in Elliott County the Extension Family and Consumer Sciences Council and the Partnership for a Healthy Elliott County designed a program called Forever Fit Good Habits for a lifetime. 22 participants enrolled in the program that is point based with the competition against themselves. Points can be earned by cooking Plate it up recipes, posting pictures of the completed dishes on the program Facebook page, attending educational programs that emphasize demonstrations of Plate it Up recipes, and purchasing produce from the Farmers' Market or growing a garden. One component of the program, a Plate it Up Picnic encouraged all participants to bring at least one plate it up food to share with others. To date 37 plate it up recipes have been used in Forever Fit. Most recipes have received good reviews.

HICKMAN COUNTY SUCCESS STORY:

The Hickman County Farmers Market, the Fiscal Court of Hickman County, Rotary Park Committee and the Hickman County Extension Office collaborated, applied, and was awarded the Kentucky Department of Agriculture's Farm to Fork Grant. The Farm to Fork program entailed a dinner where all ingredients were locally sourced to highlight local farms, farmers, producers, Kentucky Proud products and recipes. The dinner would be an exclusive ticketed event held at the farmers market with the proceeds going to charity. The Hickman County Mission House was the charity to benefit from the event. All ingredients were locally sourced within 45 miles of Hickman County. The meal was prepared by Local Caterers, Bakers and Volunteers. The meal was served by the local FFA and FCCLA students. The volunteer hours contributed to the event were estimated to be valued at \$5130.00.

The Farm to Fork Committee is working together to increase awareness of our local food bank, The Mission House and the Statewide Hunger Initiative. The Mission House serves as a center point of the community and is a heavily utilized resource for many in our area especially for families who experience hunger. They distribute commodities and goods to the individuals and families of Hickman County who have need. They also support the Feeding America program and have an emergency pantry and thrift store. The representatives from Kentucky Department of Agriculture and the County Judge Executive spoke during the dinner about hunger in KY and the new Farmer's Market. The dinner generated \$3,800 for The Mission House which is estimated to produce 11,400 meals for Hickman County Families.

MORGAN COUNTY SUCCESS STORY:

Morgan County Extension volunteer leaders and extension agents recognized the need for a partnership to address access to locally grown fruits and vegetables to improve the health and wellness of Morgan Countians and supplement income for local farmers/gardeners. Local partnerships of the Morgan County Diabetes Coalition, Morgan County Farmers Market and team work of ANR agent and FCS agent have successfully established strong collaborations. Grant writing to fund the Diabetes Coalition projects including: Veggie Bucks for Youth, Fun on the Farm, Field Days, Food Preservation Programs, "Cooking Through the Calendar" and numerous other activities and events, the Extension Service continues to provide valuable organizational, educational, agronomic and family and consumer sciences support to these groups.

Agent led trainings include: Home-Based Micro-processing and Sampling certifications, 4-5 veggie bucks demonstrations, youth and adult food preparation courses, along with "hands on" food preservation sessions. Publications featuring gardening, Plate-It-Up or Kentucky Proud recipes, and health/nutrition/food safety are also distributed. "Veggie Buck" days also provide youth and families an opportunity to sample vegetables – many for the first time while increasing income for the growers and health and nutrition for families. Results of these efforts include:

1. 95% increase in purchase & preparation of locally grown fruits & vegetables for families.
2. A 30% increase in income derived from farming, especially noted for women farmers;
3. Eight home based micro-processing certifications
4. An increase in WIC and Senior Farmers Market voucher redemption rates;
5. Increase in participation in Food Preservation workshops (including intergenerational)
6. Increase in number of youth "sampling" vegetables and asking parents to make the dishes sampled for them
7. Leadership developing and organizing new facility plans, plus events to attract new visitors; and
8. Growth in the number of new customers indicating community recognition of where to find healthy, locally grown, fresh produce.
9. Recognition of selection, preparation and sampling of locally grown foods through the "Plate it Up - KY Proud" promotion of locally grown produce - "producing a win-win for farmers and families alike" - better nutrition - better health - healthier incomes.

CHRISTIAN COUNTY SUCCESS STORY:

Kentucky has the fifth highest adult obesity rate in the nation with an adult obesity rate of 33.2 percent. Increased consumption of unhealthy food is one of the factors. Families need healthy advice about ways to prepare fruits and vegetables.

Beginning in the Spring of 2014, the staff at the University of Kentucky Cooperative Extension Service in Christian County developed a farmer's market buyers guide to market Extension, provide healthy eating tips, and to feature "Plate It Up!" recipes. Plate It Up! is a joint program between the Cooperative Extension Service, Human Environmental Sciences and the Kentucky Department of Agriculture. The program promotes locally grown commodities and encourages consumers to buy locally. It also has the goal of creating a better, healthier lifestyle and reducing obesity. Agents and assistants prepare Plate It Up! recipes weekly and distribute samples as well as healthy eating information at the Downtown Hopkinsville Farmers Market.

In 2016 market season, over the 20-week focus on Plate It Up, approximately 1,500 people visited the Extension booth and tasted fresh produce cooked using the Kentucky Proud "Plate It Up!" recipes. Many of those of sampled recipes indicated they were using these recipes at home. One farmer's market patron said she comes to taste the recipe and then buys products to make it at home that evening.

Approximately 75 people participate in the recipe tastings each week and more than 1,000 copies of

the buyer's guide were distributed to market patrons, the housing authority, the county fair, health fairs, civic groups, the women's shelter and the senior citizens center. Additionally, the market's Facebook page promotes the recipe and the tasting event each week to over 750 followers

KENTON COUNTY SUCCESS STORY:

Kentucky adults rank among the ten highest for poor consumption of fruits and vegetables. The Center for Disease Control reports that 33.2% of Kentucky residents are obese, 46.2% consume fruit less than 1 time per day and 24.9% consume vegetables less than 1 time per day. In an effort to encourage Kenton County senior citizens to consume more locally grown fruits and vegetables and increase knowledge of cooking with produce found in the farmers market, the Family and Consumer Sciences Extension Agent worked with a senior center, to provide eight monthly educational lessons. Over 17 seniors attended the sessions completing a pre and post lesson evaluation. Samples of various Plate It Up! Kentucky Proud recipes were demonstrated and served to participants. Food safety tips, nutritional information and preparation techniques were taught. As a result of the monthly sessions: 82% of the seniors were somewhat likely to try the recipes at home upon the taste test; 76% shared the information and recipe with a friend or family member; after receiving the recipe card after each session, over 50% stated they were likely to purchase locally grown fruits and vegetables when available. 40% stated they had visited the local farmers market for the first time after hearing about it at the program. At the conclusion of the last session for the year one of the seniors commented "I love it when you come, because you bring us recipes that do not require too much chopping or expense, and things that are practical for older adults to prepare when we are alone"

APPENDIX B: Consumer Sampling 2017-2018

Trained graduate research assistants from the Department of Dietetics and Human Nutrition visited and surveyed consumers at nine different farmers markets across Kentucky during the peak farmers' market season (June – August 2018). A collective sample of 300 participants was surveyed at Fayette County (n=19), Hardin County (n=52), Jefferson County (n=42), Knox County (n=22), McCracken County (n=22), Montgomery County (n=40), Owsley County (n=37), Pike County (n=37), and Trigg County (n=24). Sampling was conducted in collaboration with the FCS Extension agents at respective counties, who prepared and provided a PIUKP recipe sample at the markets. The market locations were diverse in geographic location, the number of producers, the type of market, and the consumer population.

Across the nine markets (n=300) surveyed, 42.6% of consumers had already tried a PIUKP recipe at least once at the market before. When asked if they normally tried samples at a farmers' market and/or a grocery store, 40.3% answered they tried it frequently, while 48.0% reported trying them sometimes. Similarly, in terms of taking recipe cards, 40.3% of all participants reported frequently taking recipe cards whenever provided, while 47.7% took them sometimes. Participants were asked to rate their overall impression of the PIUKP sampled recipe (1=poor flavor and 10=loved it) and the average score was 8.84 ± 1.62 .

Consumers were asked "*Does sampling at the FM contribute to your plan to make the sampled recipe (1=sampling contributes none and 10= sampling contributes a lot)?*" The average score was 7.94 ± 2.26 , indicating that sampling of PIUKP recipes does contribute to making the sampled recipe at home. As well, consumers were asked "*Do recipe cards at the farmers market contribute to your plan to make the recipe (1=cards contributed none and 10=cards contribute a lot)?*" The average score was 7.86 ± 2.30 , indicating recipe cards for PIUKP recipes do indeed contribute to making recipes at home.

The surveyed sample was also asked to self-report their daily produce consumption. Nearly 52% of the participants reported consuming at least 5 or more servings of fruits and vegetables daily. Average daily fruit intake was 2.06 ± 1.15 servings and average daily vegetable intake was 2.86 ± 1.72 servings.

Photos Consumer Sampling – Summer 2018 (9 Kentucky counties)



Table 1. Socio-demographic information across nine surveyed KY counties (US Census Bureau - 2017)

County	Total population (July 2017)	Age	Percent with College Education	Median income and poverty %	Race and ethnicity				
					<i>White alone</i>	<i>African American</i>	<i>Hispanic or Latino</i>	<i>Asian</i>	<i>>2 races</i>
Fayette	321,959	21.0% <18 yo 12.9% >65 yo	41.4%	\$50661 17.9%	77.6%	15.2%	7.2%	4.2%	2.6%
Hardin	108,071	24.6% <18 yo 13.7% >65 yo	23.6%	\$51541 13.8%	80.5%	12.7%	0.5%	2.3%	3.7%
Jefferson	771,158	22.3% <18 yo 15.7% >65 yo	31.8%	\$50099 14.9%	72.3%	22%	0.2%	2.9%	2.4%
Knox	31,227	23.3% <18 yo 16.9% >65 yo	10.9%	\$26553 39.2%	96.8%	1.3%	0.3%	0.3%	1.3%
McCracken	65,385	22.3% <18 yo, 19.4% >65 yo	22.9%	\$42303 18.7%	85.3%	11.0%	0.4%	0.9%	2.3%
Montgomery	27,928	23.7% <18 yo 15.7% >65 yo	16.6	\$39750 17.9%	95%	2.8%	0.3%	0.4%	1.4%
Owsley	4,435	21.7 <18 yo 19.4% >65 yo	17.4%	\$22106 45.2%	84.3%	9.3%	5.2%	3.6%	2.3%
Pike	58,883	20.6% <18yo 18.2% >65yo	31.4%	\$32816 31.4%	97.7%	0.8%	0.1%	0.5%	0.8%

Trigg	14,444	21.7%<18yo 22.2%>65yo	18.0%	\$45032 14.5%	90.0%	7.0%	0.4%	0.3%	2.2%
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Out of the surveyed counties, Jefferson county is the most densely populated while Owsley is the least populated area.

Table 2. Self-reported average daily fruit and vegetable consumption of adults surveyed at farmers markets across nine Kentucky counties during Summer 2018

County (n)	Fruit (avg/day)	Vegetables (avg/day)	Total Fruit & Vegetable (avg/day)	% population consuming 5 or more fruits and vegetables daily
Fayette (19)	1.95±1.26	2.55±1.81	4.36±2.39	42.12%
Hardin (52)	2.08±1.38	2.98±1.64	5.00±2.48	50.00%
Jefferson (42)	2.13±1.08	2.57±1.41	4.47±2.12	42.90%
Knox (22)	2.00±1.22	2.96±1.97	4.96±2.47	50.00%
McCracken (22)	2.43±1.61	3.15±2.92	5.32±4.32	40.90%
Montgomery (40)	1.84±0.81	2.60±1.10	4.25±1.57	37.50%
Owsley (37)	2.13±0.79	3.20±1.59	5.18±1.96	62.16%
Pike (37)	1.91±0.93	2.44±0.97	4.34±1.68	37.84%
Trigg (29)	2.27±1.25	3.45±2.24	5.52±2.89	62.28%
All Counties (300)	2.06±1.15	2.86±1.72	4.80±2.42	48.00%

According to the data collected through a standard Food Frequency Questionnaire, 48% of the surveyed population reportedly consumed five or more servings of fruits and vegetables on a daily average. Amongst the nine participating counties, Trigg county had the highest percentage of population consuming 5 or more servings of produce per day with intakes at 5.52 ± 2.89 servings of fruits and vegetables combined. The lowest levels of daily produce consumption were recorded in Montgomery county with only 37.5% of the population reporting their intake at five or more servings. Overall, participants across the state consumed anywhere from 1.84 ± 0.81 to 2.43 ± 1.61 servings of fruit, and 2.44 ± 0.97 to 3.45 ± 2.24 servings of vegetables every day.

Table 3 Sampling experience of adults surveyed at farmers markets in Summer 2018

County (sample size)	Had you tried a PIUKP recipe at market before today? (% yes)	Does sampling at the FM contribute to your plan to make the sampled recipe? 1=sampling contributes none 10= sampling contributes a lot	Do recipe cards at the FM contribute to your plan to make the recipe? 1= cards contribute none 10= cards contribute a lot	What was your impression of the PIUKP recipe sampled today? 1=poor flavor 10=loved it
Fayette (19)	26.30 %	7.16 ± 2.01	7.58 ± 2.07	8.56 ± 1.54
Hardin (52)	46.20%	7.68 ± 2.36	7.58 ± 2.26	8.68 ± 1.47
Jefferson (42)	35.70%	7.88 ± 2.33	7.71 ± 2.42	8.73 ± 1.98
Knox (22)	59.10 %	8.78 ± 1.72	8.87 ± 1.65	9.00 ± 1.16
McCracken (22)	22.70%	8.60 ± 1.97	7.62 ± 2.34	8.73 ± 1.25
Montgomery (40)	42.50 %	8.33 ± 1.78	7.93 ± 2.30	9.39 ± 0.96
Owsley (37)	62.20 %	8.14 ± 2.27	8.25 ± 1.88	8.78 ± 2.09
Pike (37)	35.12 %	7.79 ± 2.33	8.11 ± 2.20	8.84 ± 1.33
Trigg (29)	44.83 %	7.32 ± 2.93	7.21 ± 3.14	8.56 ± 2.23
All Counties (300)	42.60%	7.94 ± 2.26	7.86 ± 2.30	8.84 ± 1.62

Table 4: Sampling experience of adults surveyed at farmers' markets in Summer 2018

County (sample size)	Do you normally try samples at the grocery or FM? (% yes)		Do you normally take recipe cards provided at the grocery or FM? (% yes)	
	Frequently	Sometimes	Frequently	Sometimes
Fayette (19)	57.90%	42.12%	42.12%	47.41%
Hardin (52)	46.20%	38.47%	36.54%	55.77%
Jefferson (42)	30.95%	52.38%	30.95%	45.20%
Knox (22)	50.00%	31.82%	36.36 %	59.10%
McCracken (22)	18.18%	68.20%	18.18%	63.60%
Montgomery (40)	40.00%	55.00%	60.00 %	32.50%
Owsley (37)	37.84%	54.10%	51.35 %	43.24%
Pike (37)	51.35%	35.14%	43.24 %	40.50%
Trigg (29)	31.03%	58.26%	31.03%	51.72%
All Counties (300)	40.33%	48.00%	40.33%	47.66%

Table 5. Fruit and vegetable consumption of adults surveyed at farmers' markets (Summer 2017 and Summer 2018)

County (sample size)	Fruit (avg/day)	Vegetables (avg/day)	Total Fruit & Vegetable (avg/day)	% population consuming 5 or more fruits and vegetables daily
Fayette 2017-18 (n = 104)	2.61 ± 1.41	2.81 ± 1.53	6.93 ± 1.86	58.65% (n=61)
Trigg 2017-2018 (n = 53)	2.42 ± 1.46	3.39 ± 1.87	7.05 ± 2.26	60.40% (n=32)
Knox 2017-2018 (n = 40)	1.98 ± 1.02	2.85 ± 1.65	6.37 ± 1.74	47.50% (n=19)
Total no. of different counties surveyed in 2017– 18 = 13 (n = 523)	2.21 ± 1.20	2.86 ± 1.59	4.91 ± 2.94	49.71% (n=260)

From the data collected over a period of two seasons (2017 and 2018) of farmers' markets across Kentucky, the sample size was n=523. Almost 50% of consumers reported consuming 5 or more fruits and vegetables daily, with a total produce intake of 4.91 ± 2.94 servings per day. There were three counties which were surveyed both consecutive years, and the highest percentage of consumer participants with an intake of 5 or more fruits and vegetables on a daily average belonged to Trigg county at 60.40%, closely followed by Fayette at 58.65%. Furthermore, the average intake of fruits per day ranged from 1.98±1.02 to 2.61±1.41 servings, and 2.81±1.53 to 3.39±1.87 servings of vegetables.

Table 6. Sampling experience of adults surveyed at farmers markets (Summer 2017 and Summer 2018)

County (sample size)	Had you tried a PIUKP recipe at market before today? (% yes)	Do you normally try samples at the grocery or FM? (% yes)	Do you normally take recipe cards provided at the grocery or FM? (% yes)	Does sampling at the FM contribute to your plan to make the sampled recipe? 1=sampling contributes none 10= contributes a lot	Do recipe cards at the FM contribute to your plan to make the recipe? 1= cards contribute none 10= cards contribute a lot	What was your impression of the PIUKP recipe sampled today? 1=poor flavor 10=loved it
Fayette 2017-18 (n = 104)	25.96%	31.73%	50.00%	7.39 ± 2.46	7.24 ± 2.58	8.48 ± 1.74
Trigg 2017-2018 (n = 53)	47.17%	35.95%	30.20%	8.08 ± 2.55	7.94 ± 2.96	8.71 ± 1.89
Knox 2017-2018 (n = 40)	45.00%	40.00%	47.50%	8.80 ± 1.73	9.06 ± 1.71	9.21 ± 1.06
Total different counties surveyed in 2017–18 = 13 (n = 523)	62.52 %	61.65%	64.24%	7.97 ± 2.30	7.87 ± 2.42	8.76 ± 1.66

From the 2017-2018 combined data (n=523), a 62.52% of consumer participants had tasted a PIUKP recipe sampled at a farmers’ market at least once. Interestingly, only 25.96% of participants from Fayette county, the second-most densely populated county in KY, had tried the same in two consecutive years.

On an average, participants rated the samples at 8.76±1.66 on a Likert scale of 1 to 10, with the highest being in Knox county at score of 9.21±1.06 out of a 10. More than half the percentage of surveyed population usually tried samples (61.65%) and procured recipe cards (64.24%) at a grocery store and/or a market.

Project #2 Evaluating Low Tunnel Vegetable Production Systems for Improving Local Food Availability in Kentucky

Project Summary

Growers across Kentucky are looking to extend their production season earlier and later through the use of variety selection, planting date manipulation, and structures to extend the season. School systems are also trying to produce food locally that can be incorporated into their meal services. While these two main groups of producers have had various levels of success, winter production will help both groups achieve some of their desires. . Low tunnels have been shown to be cost-effective, easily constructed structures that offer many benefits of high tunnels in terms of extending the growing season of certain crops. Low tunnels, by definition, are hoops 24” – 48”high that are covered by either plastic or agricultural fabric. They differ from high tunnels, in that they are too short for a person to walk under, but offer many of the same season extending advantages. we propose evaluating low tunnel systems for winter vegetable production in Kentucky.

Project Approach

Objectives

#	Objective	Completed?	
		Yes	No*
1	Replicated trials will be established at the UK Horticulture Research Farm and at RCARS.	X	
2	These trials will consist of 12 varieties of winter vegetables that have been tentatively identified as being suitable for low tunnel production	X	
3	Low tunnels will be constructed either of wire hoops or pvc pipe.	X	
4	During the second winter of production, project results will be communicated via a webinar, an Extension fact sheet, and a presentation at the annual Kentucky Fruit and Vegetable Grower’s Conference		X

Goals and Outcomes Achieved

#	Goal	Outcome
1	Trials were established in Lexington and at RCARS-Breathitt County.	Over 500 people had the chance to observe these trials at various times including First Friday Events in Lexington and College of Ag Food and Environment Field Days at RCARS
2	Identified varieties that are suitable for late fall/winter production in KY	12 varieties Identified
3	Determine the effectiveness of electrical conduit as compared to wire and PVC	We determined that electrical conduit was more effective than wire or PVC for hoops

Challenges and Developments

/52012203 .#	Challenge or Development	Corrective Action or Project Change
1	The first year planting at RCARS was destroyed by armyworm and cutworm	Planting site and surrounding areas was kept vegetation free during the preceding summer
2	The first year planting at Lexington matured before Christmas because of an unusually warm autumn.	
3	3 rd co-PI resigned from the university	We had to eliminate the conventional site at Lexington
4	Unable to obtain organic certified ground at Lexington the 2 nd year because of changes in land use due to 3 rd Co-PI's resignation	Additional land was requested for the no-cost Extension year which is in place
5	Winter of 2 nd year was unusually windy and snowy at RCARS and tunnels were repeatedly shredded by winds and weather	Switched to electrical conduit and dropped one set of row cover treatments that didn't hold up to weather.
6	Unable to obtain enough reliable data for webinar	We are repeating the study for a 3 rd year at no cost in both Lexington and RCARS. Fact sheet is in process based upon other experiences with the selected crops. Lessons learned have been incorporated into many Extension and teaching presentations by the remaining co-PI's

Beneficiaries

Number of project beneficiaries:.....1100

Lessons Learned

While the study did not provide all the information we desired it did illuminate potential challenges that growers and schools might face and which were greater than anticipated. We had assumed that fall transplants would be either available locally at an economically justifiable cost, or that FFA programs or local growers would be able to produce them. While cole crop transplants are becoming more readily available it is not true that they are common or economical for large scale planting. Farm-to-school growers have also expressed the difficulty in producing their own so that they are ready for late summer planting as it conflicts with much of their summer production and marketing work. FFA programs often are short-handed during the summer if they are even active and in early August when there would still be a short window to produce transplants many FFA programs are involved with State Fair Activities. We have had a couple of extremely difficult years with challenging weather as well as pest challenges and the unexpected resignation of one of the original PIs. The weather and pest challenges does present an opportunity for schools to investigate the practicality of shipping

container production facilities. Ready-made structures could be purchased or the vo-tech programs could be recruited to construct the appropriate hydroponic and climate systems as a learning opportunity. This would virtually eliminate concerns with wildlife, most pests, and many diseases while allowing production of hydroponic greens without weather challenges. Overall in the state of Kentucky there has been an increase in the number of schools that are participating in Farm to School programs. According to the 2015 Farm to School census compiled by the USDA in 2015 there were more than 700 schools in 77 Kentucky School Districts that had programs in place to buy local Kentucky foods for their cafeterias. A press release from Ryan Quarles, Kentucky Commissioner of Agriculture, on October 8, 2018 stated that there are now 907 schools in 77 districts that are participating. There is still potential for increase both in districts and schools but it does require a dedicated food services manager and staff that are committed to using fresh, local produce even if additional work is required.

CONTINUATION AND DISSEMINATION OF RESULTS (IF APPLICABLE)

We are in the 3rd year as a no-cost extension. The low tunnel winter crops profile is in process and will be added to the Center for Crop Biodiversification Website upon completion. The university has since hired a new Extension Vegetable Specialist to replace the one that resigned and she will be able to incorporate all this information in her presentations as well as compare and contrast with her high tunnel work that she is emphasizing.

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel		
Fringe Benefits		
Travel		
Equipment		
Supplies	23500	9,916.12
Contractual		
Other – publication expense	900	0
Direct Costs Sub-Total	24400	9,916.12
Indirect Costs	2440	
Total Federal Costs	26840	9916.12

PROGRAM INCOME (IF APPLICABLE)

Source/Nature (i.e., registration fees)	Amount Approved in Budget	Actual Amount Earned
1.None	0	0
Total Program Income Earned	0	0

Contact Person

Sean Wright, 606-666-2438, shawn.wright@uky.edu

Additional Information

None provided

Project #3 Putting Specialty Crops on the table beyond the growing season by adding value.

Project Summary

A growing population of consumers seeks to increase the proportion of Kentucky specialty crops in their diets and the diets of their families, as evidenced by the increase in enrollment in Community Supported Agriculture shares, growth in size and numbers of producer-only farmers markets, increase in sales at farmers markets in South-Central Kentucky, and success of wholesalers that serve and sell Kentucky produced specialty crops. While this is an encouraging development in light of the benefits to community health, Kentucky agriculture, and regional economic development, a fundamental challenge exists: most specialty crops are seasonal, resulting in abundance during the growing season, and shortage throughout winter months. The ability to add value to specialty crops that are dietary staples for use during the off-season offers significant potential for increased production, distribution, sales, and consumption. Therefore, the objective of this project was to provide specialty crops as a year-round dietary staple by aggregating and adding value for sale and distribution when fresh produce is not normally available to consumers committed to eating Kentucky grown products. Additionally, project partners recognized that the provision or availability of specialty crop items year-round does not necessarily ensure that consumers will be aware of the opportunity to obtain such items, nor will they understand how to effectively include these value-added items in their diets for optimal nutritional value. To address these concerns, this project included both marketing and nutritional education elements to empower consumers to effectively source and use specialty products in their diets during the off-season.

Project Approach

This project included two elements. First, project partners sought to increase the availability of specialty crops by aggregating and adding value to specialty crops for sale and distribution when fresh produce is not normally available to consumers. Secondly, project partners wished to ensure that consumers are aware of the availability of these products throughout the entire year and educated on the benefits of specialty crops and the ways in which they can be easily incorporated as part of a daily diet.

Part 1. Increase consumption of specialty crops through aggregation, value-add, and distribution.

In the first year of the grant term an aggregation and value-add processing center was created at Need More Acres Farm. All equipment was purchased and installed in spring 2016. The equipment allowed Need More Acres to increase their distribution of specialty crops to CSA members by 612%, offering such items as dehydrated heirloom tomatoes, squash, hot peppers, and sweet peppers, and frozen squash and zucchini, stir fry mix (squash, zucchini, pepper, onion), cantaloupe, peaches, sweet corn, and green beans to members the following winter.

The equipment allowed for an increase in distribution of specialty crops to wholesale customers as well. Over the two year grant period, Need More Acres provided:

Bowling Green City Schools - 27,300 servings
Allen County Schools - 10,200 servings

Allen County SNAP program - 112 servings
Mammoth Cave National Park summer camp program - 775 servings
Allen County summer feeding program - 3070 servings
HOTEL INC - 3880 servings
Bowling Green Housing Authority - 150 servings
Allen County Homemakers - 70 servings
Metcalf County Extension Office (farm dinner) - 10 servings

While wholesale volume increased dramatically (from baseline of near zero to 45,567 units), perhaps the most significant accomplishment is the diversity and type of wholesale buyers served. Specialty crop products were provided for presently underserved populations including school children and low-income individuals and families. The activities described above expand specialty crop distribution to customers not previously part of the specialty crop consumer market. This expansion in the market for specialty crops had far reaching benefits from consumers to producers. Prior to 2016, purchases from producers for aggregation, value-add, and distribution were near zero. In 2016 specialty crop purchases totaled \$11,115, and in 2017 specialty crop purchases totaled \$12,666. Need More Acres aggregation and value-add processing procured product for distribution from the following specialty crop producers:

ATP Greenhouses - cherry tomatoes
Cardwell Family Farms - tomatoes
Coleman Bros. Farm – broccoli, asparagus, pumpkins
Dolan Farms - ginger, tumeric
Dunn & Bowen Orchard - peaches
Edwin Hoover - blueberries
E. Habegger Produce – green beans, honeydew, spinach, green onions, apples, sweet potatoes, cucumber, squash, tomatoes
Habegger Variety Store - garlic
Hill and Hollow Farm - lemons
Jackson's Orchard - apples
Joe Habegger - garlic
Marvin Habegger – sweet peppers, hot peppers
Perrytown Produce - cantaloupe
Rough Draft Farmstead - garlic
The Garden Center - Tomatoes
Think Little CSA - leeks, eggplant
Thomas Hoover – roma tomatoes, blueberries
Triple H Produce – peaches, pears
WKU Vineyard - grapes

Part 2. Increase consumption of specialty crops through awareness and education.

During the late spring and summer of 2016, Michelle Howell began working with the Allen County Health Department, Allen County Extension Office, and the Allen County School System to introduce specialty crops to students. The snacks included four vegetables with ranch dressing along with educational materials explaining the farm origin of the vegetables and health benefits to eating them. A significant outcome of this activity was the follow up survey completed in September 2016.

The survey, conducted by Allen County Health Department/School Nurse Clinics asked student participants to state whether they liked, disliked, did not try, or had no response when introduced to special crop vegetables. Of the 700 students who responded, 94% reported that they would try all of the vegetables they sampled again. Kohlrabi was the favorite, followed by rainbow swiss chard, purple kale, and brussel sprouts. Nursing Supervisor Carolyn Richey, RN BS stated, "I was thrilled to see the majority of the students liked all of the vegetables and only a few of the students were not willing to give them a try. From a Public Health Nurse perspective, this is major progress!!"

Need More Acres Farm and partners also provided weekly snacks for 900 students in Bowling Green City Schools. Educational materials with farm stories and health benefits accompanied the snacks. Both of the school snack programs were repeated in 2017 with similar success. Examples of the educational materials are included at the end of this report.

In May 2016, Need More Acres Farm and project partners began to provide market baskets to ninety-two SNAP Ed program participants. The baskets contained specialty crops that could be used in their weekly cooking. The Allen County extension provided cooking classes and take home recommendations for the fruits and vegetables provided. The baskets were provided to 120 participants in 2017.

Need More Acres partnered with the Allen County Extension Service and Allen County Chamber of Commerce to host a Farm City Week Luncheon in November 2016. A meal catered by *Earl G Dumplings* using primarily fruits and vegetables grown at Need More Acres (and from farm partners) was provided as well as table decorations and giveaways of specialty crops.

Also in 2016 Need More Acres partnered with the Metcalfe County Extension Office to provide a completely local meal for farmers market training. The training was to help promote and educate farmers on products that can be grown/processed for year round sales. Need More Acres (and partners) provided samples of such specialty crop products as well as product for the local the meal.

In summer 2017, Need More Acres partnered with Bloom Sustainability Consulting to host a dinner to benefit HOTEL INC, the Allen County Chamber of Commerce to host a fundraiser dinner for Dugas Park, and BOYCE General Store to serve a local farm menu to support the Double Dollars program at Community Farmers Market. Each of these events featured specialty crops produced by Need More Acres and partner producers. A menu from the 2017 dinner benefitting HOTEL INC is included at the end of this report.

Need More Acres seeks to educate both consumers and producers. Over 3000 people have attended farm tours at Need More Acres Farm in 2016 and 2017. Groups that have visited the farm to learn about the production and benefits of specialty crops have included: both experienced and beginning farmers, University of Kentucky Extension specialists and agents, the Allen County Homemakers, Bowling Green City School students, Allen County High School students, the Allen County Garden Club, and Western Kentucky University Dietetics students, among many others.

From an educator's perspective the "Farm to School" program is an enhancement of the nutritional program I use with my freshman health classes. The students tell me after the trip what vegetables they liked/disliked from the samples. The "Farm to School" program is an excellent collaboration for students to realize where food actually comes from. Often our society as a whole, more so now than even a decade ago, has a disconnect from where food comes from. This program is a great visualization for such. In conclusion, the "Farm to School" program for our students at Allen County-Scottsville High School is a great addition to our nutritional program.

Billy Jo Miller, PE/Health Allen County High School

The culmination of the awareness and education activity supported by the Specialty Crop funding is the Need More Acres Specialty Crop Guide. The guide has been in development since year one (2016). Individual pages of the guide were created, printed and distributed for use at HOTEL INC, Allen County Schools, Bowling Green City Schools, Allen County Extension, Mammoth Cave National Park. The guide is now complete and ready for distribution.

The purpose of the NMA Specialty Crop Guide was to take the experiences and conversations that were happening over and over again with our community partners and offer them a tool they could use to carry recipes, facts, information and details about Kentucky grown specialty crops with them. This resource is available to them in printed form and can also be reproduced in any way that they see necessary.

The guide is meant to be an educational tool that can be shared. Extra sheets of informational handouts are included so that they can be distributed in the classroom or during workshops. The 105 specialty crop guides purchased with grant funds will be given to farm members, farmers at Community Farmers Market, and employees at HOTEL INC, Allen County Extension, Allen County Chamber of Commerce, Allen County Schools, Bowling Green City Schools, Allen County Farm Service Agency, Allen County Conservation District, Barren River District Health Department and Allen County Health Department.

Goals and Outcomes Achieved

The goals of this project and the activities completed to achieve them were:

- 1. Increase the quantity and diversity of specialty crops available to consumers year round.**

This goal was met through the creation of an aggregation and value-add processing center at Need More Acres Farm. In 2016, an increase of distribution to CSA members of 612% far exceeded the stated target of 20%. This increase was sustained in the second year and is expected to serve as a new baseline for future activities.

Distribution to wholesale customers increased from a near zero baseline to 3409 32 oz. units served in 2016 and 2520 units served in 2017. These specialty crops were distributed to Allen County and Bowling Green City schools, HOTEL INC, Allen County Health Department, and Mammoth Cave National Park summer camp program. This list represents perhaps the most significant accomplishment of this activity: the diversity and type of wholesale buyers served. Specialty crop products were provided for presently underserved populations including school children and low-income individuals and families. The activities described above expand specialty crop distribution to customers not previously part of the specialty crop consumer market.

- 2. Increase volume of purchases of specialty crops from producers for aggregation, value-add, and distribution by 100%.**

Following the purchase of equipment and creation of a processing center, Need More Acres began to source and aggregate product from a diversity of farms throughout the region.

Prior to 2016, purchases from producers for aggregation, value-add, and distribution were near zero. In 2016 specialty crop purchases totaled \$11,115, and in 2017 specialty crop purchases totaled \$12,666. Need More Acres purchased specialty crops from 20 farmers for aggregation, value-add processing, and wholesale and retail distribution to: Allen County Extension SNAP program; Bowling Green City Schools; Allen County Scottsville Schools; HOTEL INC; Need More Acres CSA customers; Community Farmers Market customers; and farm tours, farm dinners, and other outreach events.

3. Develop a consumer guide to promote Kentucky grown specialty crops as a year round dietary staple.

The Need More Acres Specialty Crop Guide was developed in phases as “stand alone” pages with information and recipes for specialty crops were created, printed, and distributed as educational materials to accompany distribution to schools and other nutrition assistance programs described in this project report. The Guide was completed and ready for publication in early November 2017. The 105 specialty crop guides purchased with grant funds will be given to farm members, farmers at Community Farmers Market, and employees at HOTEL INC, Allen County Extension, Allen County Chamber of Commerce, Allen County Schools, Bowling Green City Schools, Allen County Farm Service Agency, Allen County Conservation District, Barren River District Health Department and Allen County Health Department. This will offer both consumers and community partners a better understanding of the availability and possibility of small scale, year round farming. The content of the specialty crop guide will be an available resource for community partners to duplicate and use for years to come.

4. Develop and execute marketing and branding plan for aggregated, processed and distributed specialty crop items.

In collaboration project partners, Michelle Howell has creatively directed activities and materials to introduce specialty crops to a wider and more diverse consumer population. Need More Acres partnered with the Allen County Health Department, Allen County Extension Office, and the Allen County School System, to bring specialty crop snacks and educational materials to students, teachers, staff, and parents. Servings of specialty crops and educational materials were distributed through the Allen County SNAP educational program. A partnership project with Allen County Extension provided cooking classes utilizing specialty crops. Need More Acres was visited by more than 3000 guests for farm tours. All of these projects include specialty crop educational materials that are consistent, creative, thoughtful and beautiful in design. Examples of marketing and branding materials are featured at the end of this report.

5. Partner hosted Farm to Table dinner showcasing value-add specialty crops in off-season meal preparation.

Farm to Table dinners have been a highlight of this project. Need More Acres collaborated to host three farm to table events featuring specialty crops during 2016 and 2017. In 2016, Need More Acres partnered with the Allen County Extension Service and Allen County Chamber of Commerce to host a Farm City Week Luncheon. The luncheon featured a meal catered by *Earl G Dumplings* using primarily fruits and vegetables grown at Need More

Acres (and from farm partners) as well as table decorations and giveaways of specialty crops. Also 2016, Need More Acres partnered with the Metcalfe County Extension Office to provide a completely local meal for farmers market training. The training was to help promote and educate farmers on products that can be grown/processed for year round sales. Need More Acres (and partners) provided samples of such specialty crop products as well as product for the local the meal.

In 2017 Need More Acres partnered with Bloom Sustainability Consulting to host a dinner to benefit HOTEL INC at the farm. The dinner was on a perfect June evening and featured a locally sourced menu and local music. Fifty happy guests attended (see photos in Section 8). The Howells partnered with the Allen County Chamber of Commerce to host a fundraiser dinner for Dugas Park and with the Boyce General Store to serve a local farm menu to support the Double Dollars program at the Bowling Green Community Farmers Market.

6. **Host on-site project demonstration field day at Hickory Lane Farm so that other farmers may learn how to replicate the model.**

In 2017, Michelle and Nathan Howell hosted a variety of individuals and organizations to visit Need More Acres to learn about their model of expanding the availability of specialty crops year round including:

- Kentucky Department of Agriculture Farm to School program
- Lexington Food Hub Discussion
- Food Chain Farmer Network
- WKU Dietetic Interns
- Kentucky Rural-Urban Exchange
- Allen County Garden Club
- Allen County Natural Resource & Conservation Service
- University of Kentucky Sustainable Farm
- University of Kentucky CSA Program
- Community Farmers Market farm tour
- Kentucky Women in Agriculture Board of Directors

Additionally Need More Acres farm has hosted multiple educational opportunities in order to promote growing specialty crops as an occupation for small-scale or beginning farmers. Those who participated include:

- Allen County Scottsville High School
- Bowling Green Housing Authority
- Y-Corps
- Kentuckians for the Commonwealth
- WKU Agribusiness Class
- Metcalfe County Extension
- Grayson County Extension
- Allen County Extension
- Barren County Extension
- Barren River Homeschool Association

Nathan and Michelle have used their farm as a farmer incubator, personally mentoring over

25 beginning or experienced farmers from across Kentucky and neighboring states. Mentoring has happened via personal farm tours, phone calls or visits to their farms. Mentoring includes follow up by text, email or phone call.

Education and mentoring is not limited to site visits. Nathan and Michelle were invited to present on their expansion of specialty crops to consumers at the following conferences:

- Kentucky Fruit & Vegetable Conference
- Organic Association of Kentucky Conference
- Kentucky Women in Agriculture Conference
- Bowling Green Chamber of Commerce
- Kentucky Department of Public Health Conference
- Kentucky Green Living Fair
- Warren County Public Library
- Allen County Public Library
- Children's Environmental Health Summit

Beneficiaries

This grant project was proposed to ensure that specialty crops are a year-round dietary staple, to extend the seasonal bounty beyond the season by aggregating and adding value to specialty crops for sale and distribution when fresh produce is not normally available to consumers committed to eating Kentucky grown products. The intended beneficiaries were new consumers and specialty crop producers. The Howell's and their partners hoped to expand access to specialty crops to as many stakeholders as possible, with a priority on consumers that may currently be underserved. Beneficiaries include; Allen County Extension SNAP program; Bowling Green City Schools; Allen County Scottsville Schools; HOTEL INC.

In 2016, an increase of distribution to CSA members of 612% far exceeded the stated target of 20%. This increase was sustained in the second year and is expected to serve as a new baseline for future activities.

Distribution to wholesale customers increased from a near zero baseline to 3409, 32 oz. units served in 2016 and 2520 units served in 2017.

Prior to 2016, purchases from producers for aggregation, value-add, and distribution were near zero. In 2016 specialty crop purchases totaled \$11,115, and in 2017 specialty crop purchases totaled \$12,666.

Need More Acres purchased specialty crops from 20 farmers for aggregation, value-add processing, and wholesale and retail distribution.

Consumers and producers were benefitted in quantifiable ways, as listed above, but also in ways that cannot easily be counted or measured. The partnerships cultivated through this project are invaluable. The change in dietary habits of new consumers may bring benefits that aren't evident in the short term, or may be evident but difficult to measure. All of those farmers mentored or supported, all of the project partners listed under Goal #6, and unknown (uncounted) others have benefitted from this project. Most of the beneficiaries will continue to realize benefits as these activities and partnerships continue on solid footing.

The Farm to School program is a great asset for Allen County Schools. Because of the program, many of our students have been afforded the opportunity to try new fruits and vegetables that they may not have otherwise had. Locally grown produce is more nutritionally dense because it is consumed more quickly following its harvest, so children get more of a nutritional benefit. Students also gain more insight as to where and how fruits and vegetables are grown. Utilizing locally grown foods is a win-win for our local schools, farmers, and community. Amy Meador, Dietitian
Allen County Health Department

Lessons Learned

One of the biggest challenges of this project was education and promotion regarding specialty crops grown during the late fall, winter and early spring months. The most familiar vegetables (which are also the most widely grown) like tomatoes, cucumbers, peppers, and watermelon do not have a season that lines up with the school season or the needs of many of the other project partners. While a wide variety of specialty crops can be grown year round, additional educational efforts for community partners and consumers would be beneficial in making them aware of the availability of, and preparation recipes for, these products. Even when community partners became aware of specialty crop availability, they needed consumer education for preparation. There is also a need to create excitement and entertainment to encourage people to try them. The production of outreach materials such as a video, printed material and farm tours helped significantly, but there is more work that could be done in this area. A link to the video is provided in Section 8 of this report.

An additional lesson learned is that no amount of planning completely prepares for the period of time in late March and early April when high tunnel production lags, but field production isn't quite ready. This results in a period of lean product availability. Learning from this lesson, Need More Acres is adding another tunnel exclusively for all the favorites (beets, turnips, carrots, and lettuce) to be ready for harvest in mid-March.

Contact Person

Michelle Howell, 270-799-5563, michelle.lifeisgood@gmail.com

Additional Information (Optional)

Photos, video and other supporting resources and materials can be found at the end of this report.

9. Final Financial Report

Grant funds received:\$46,565

Grant funds expended: \$46,566.45

Total remaining: -\$1.45

Line items: see budget table below

Updated Project Budget:

Items	Year 1	Year 1 actuals	Year 2	Year 2 actuals	Total
Salaries/ wages	0	0	0	0	0
Benefits	0	0	0	0	0
Travel	0	0	0	0	0
Equipment:					
Kolpak Q56-054-FT 5x4 walk in freezer top mount 6 ft by 6 ft with floor	\$4,973	\$4,995.58	0	0	\$4,995.58
Techfrost JOF1 item #ADGJOFI Blast Chiller/Freezen 2.9 cubic feet.	\$4,950	\$1,500.00	0	0	\$1,500.00
True GDM-SF-25 Glass Door reach in freezer 5 cubic feet.	\$2,200	\$1,850.43	0	0	\$1,850.43
True TS-49-G2 section freezer	\$2,886	\$2,675.00	0	0	\$2,675.00
TrueGDM 72 3 door cooler	\$3,885	\$2,785.00	0	0	\$2,785.00
<i>Window ac unit (added with approval)</i>		\$421.34	0	0	\$421.34
<i>Coolbot (added with approval)</i>		\$315.00	0	0	\$315.00
<i>Reach in cooler (2) (added with approval)</i>		\$3,490.00	0	0	\$3,490.00
Supplies					
UY-Q19A Ice Machine	\$1,872	\$1,595.00	0	0	\$1,595.00
ARY VP 330 Vacuum Sealer	\$2,699	\$2,258.90	0	0	\$2,258.90
12x12 regal milk crates – qty 75 (\$8 each)	\$600	\$525.00	0	0	\$525.00

<i>Dehydrator (added with approval)</i>		\$1,000.00	0	0	\$1,000.00
<i>Harvest lugs (added with approval)</i>		\$465.20	0	0	\$465.20
Contractual					
Michelle Howell – marketing and branding (consultant) and project administration	\$5,000	\$5,000	\$5,000	\$5000	\$10,000
Other					
Social media, advertising (Facebook)	\$500	0	\$500	\$1000	\$1,000
Specialty crop guide development (Jenna Settle, Emily Cothran)	\$3,500	\$3,500	0		\$3,500
Printing costs (Red Ranger Media)	\$1,000	0	\$1,000	\$2102.46	\$2102.46
Indirect – Christian Ryan, Bloom Sustainability Consulting – project administration and reporting	\$2,500	\$2,500	\$2,500	\$2,500	\$5,000
Event costs – Farm to Table and Field Day	\$1,000		0	\$1,087.54	\$1,087.54
Total	\$37,565	Total: \$34,876.45	\$9000	Total: \$11,690	Total actual spent: \$46,566.45 balance: - \$1.45

Itemized budget.

Date	Payee	Memo	Payment	Balance	expense type
2016		grant funds		46,565.00	
3/15/2016	Webstaurantstore.com	reach-in freezer	1,850.43	44,714.57	equipment
3/9/2016	Michelle Howell	contractual SCG	5,000.00	39,714.57	Personal Payroll
3/9/2016	Jenna Settle	Design/printing	2,500.00	37,214.57	Professional

					Fees
3/9/2016	Emily Cothran	SP Guide Editing	1,000.00	36,214.57	Professional Fees
3/9/2016	Christian Ryan (Bloom)	Grant Administration	2,500.00	33,714.57	Professional Fees
5/9/2016	ReliaBuy.com	ice machine	1,595.00	32,119.57	equipment
5/9/2016	ReliaBuy.com	reach-in cooler (2)	3,490.00	28,629.57	equipment
5/9/2016	ReliaBuy.com	two-section freezer	2,675.00	25,954.57	equipment
5/9/2016	ReliaBuy.com	three-door cooler	2,785.00	23,169.57	equipment
5/6/2016	Inferno Equipment	blast chiller	1,500.00	21,669.57	equipment
5/5/2016	VacuumSealersUnlimited	vacuum sealer	2,258.90	19,410.67	equipment
5/12/2016	Central Restaurant Products	refrig unit	4,995.58	14,415.09	equipment
5/25/2016	Tammy Fleming	dehydrator	1,000.00	13,415.09	equipment
5/27/2016	Dubois Agrinovation	harvest lugs	465.20	12,949.89	supplies
5/27/2016	AJ Madison (Star Creations)	window ac unit	421.34	12,528.55	equipment
5/27/2016	Store it Cold	coolbot	315.00	12,213.55	equipment
5/27/2016	Deerfield supplies	harvest bins (3)	525.00	11,688.55	supplies
2017					
2/17/2017	Christian Ryan (Bloom)	Grant Administration	2,500.00	9,188.55	Professional fees
7/1/2017	Michelle Howell	contractual SCG	5,000.00	4,188.55	Personal Payroll
7/9/2017	Need More Acres	farm dinner reimburse	1,087.54	3,101.01	supplies
10/16/2017	Red Ranger Media	design/printing specialty crop guide	2,102.46	998.55	Professional fees
2016/2017 monthly payment	Facebook	social media	1,000.00	-1.45	fees
11/1/2017		Total funds spent	46,566.45		

Photos, graphics and other supporting resources:

Kids eating veggies! Video here:

<https://drive.google.com/file/d/0B3QN8ahpr18rQ0FraEdLTG11TGs/view?usp=sharing>

Social media:

<https://www.facebook.com/needmoreacresfarm/>



SWISS CHARD



Hello Kids!

We hope that you enjoyed the carrots last week. This week we have a new vegetable to share with you-Swiss Chard! Some people call it Rainbow Chard because the stems grow in all kinds of colors like red, white, yellow, and orange. Swiss Chard tastes a lot like spinach. You can either eat it raw or cook it. We like to add it to our scrambled eggs here on the farm.

We hope you enjoy!

Nathan & Michelle Howell
Need More Acres Farm

DID YOU KNOW?

- We help build strong and healthy bones
- We help to make hair healthy
- We reduce the risk of diabetes
- We can help make you smarter
- We can help you see better

ORGANICFACTS.COM

NEEDMOREACRES.COM  



CELERY



Hello Kids!

Some people are surprised to know that we have been growing celery in our high tunnel all winter long. Fresh celery is much richer in flavor and color. You can eat all of the celery not just the stalks. We love the leaves the most.

We hope you enjoy!

Nathan & Michelle Howell
Need More Acres Farm

DID YOU KNOW?

- Our seeds are smaller than these dots
- We're related to carrots, parsnips and parsley.
- We're also related to anise, which has a licorice-like flavor.
- We were once considered a medicinal herb rather than a vegetable.
- Every part of us can be used.

FRESHFORKIDS.COM

NEEDMOREACRES.COM  



KALE



Hello Kids!

Things are always changing on the farm. The weather determines how fast or slow our vegetables grow. We thought that we were going to be bringing you lettuce this week, but it hasn't grown very much in the last few weeks. The kale is growing super fast so we are bringing you samples of some of our favorite kale leaves!

We hope you enjoy!

Nathan + Michelle Howell

Need More Acres Farm

DID YOU KNOW?

- It's been around for over 2,000 years. Kale was popular in ancient Greece and Rome and during the Middle Ages. It was first cultivated in the U.S. in the 17th century.
- It's got a lot of delicious, healthy cousins. Kale is related to cabbage, brussels sprouts and collard greens.
- It thrives in cool climates. Unlike many of our other favorite produce items that are in season during the summer months, kale has a late harvest period and grows best under light frost conditions.
- It comes in different shapes and colors. You can find kale in green, blue-green, purple, and white with different shaped leaves.
- It's super vitamin rich in its natural form. One cup of raw kale contains over 100% of your daily recommended intake of vitamins A, C and K.

FRESHHEALTHYEATS.COM

NEEDMOREACRES.COM



TURNIPS



Hello Kids!

We hope that you have been enjoying trying the vegetables that we grow here on our farm. This week we are sharing turnips with you. Most turnips are white with purple stripes and they grow under the ground. They can be harvested and stored to be eaten over the winter months. We call these storage crops. This helps us to add more variety to what is available during the winter here in Kentucky.

We hope you enjoy!

Nathan + Michelle Howell

Need More Acres Farm

DID YOU KNOW?

- We're high in vitamin C and are a good source of dietary fiber (especially our leaves or "turnip tops")
- Our tops are rich in beta carotene, vitamin E & folate (one of the B vitamins)
- We're a good source of potassium
- 100g of our root has 95kJ
- 100g of our leaves has 55kJ

FRESHFORKIDS.COM

NEEDMOREACRES.COM

Value-added specialty crops



Labeling for value added items.



Frozen items for sale at market.



Walk in freezer.



Coolbot



Dehydrator.



Reach in freezer.



Produce lugs.



Reach in cooler.

Field trips at Need More Acres Farm.



Nathan demonstrates for potential future farmers.



Checking out the high tunnels.



WKU Dietetics students tour the farm and use the kitchen (below).



Farm Dinners at Need More Acres Farm.

The menu:

**Need More Acres
Farm Dinner
To Benefit HOTEL INC**



Appetizer

Fresh Baked Bread
Prepared by Think Little
Butter
Prepared by JD Country Milk
Cheese
Prepared by Kenny's Farmhouse Cheese
Root Vegetables
Grown by Need More Acres Farm
Homemade Ranch Dressing
Prepared by Need More Acres Farm

Main Course

Pork Chops
Grown by Need More Acres Farm
Prepared by Home Cafe
Chicken
Grown by Need More Acres Farm
Prepared by Home Cafe
Potato Salad
Grown by Need More Acres Farm
Prepared by Home Cafe
Summer Roasted Vegetables
Grown by Need More Acres Farm
Prepared by Boyce General Store
Quinoa Salad on Mixed Greens
Grown by Need More Acres Farm
Prepared by Boyce General Store

Dessert

Blueberry Crumble
Grown by Lovee & Rose Farms
Prepared by The Pie Queen
Peanut Butter Pie
Produced by Gone Nuts
Prepared by The Pie Queen
Buttermilk Ice Cream
Prepared by Carol Crowe

Cucumber & Mint Water
Grown by Top Crops
Fresh Juices
Prepared by Zest! Juice for Life


#nmafarmdinner





Farm dinner photographs by Portugal Story Co. More photographs available at:
<http://bloomsustainabilityconsulting.com/worth-1000-words.html>

A glimpse of the Need More Acres Specialty Crop Guide.

*Growing up on a small tobacco farm in Central Kentucky, it seems I have always
had Kentucky soil under my fingernails and in my veins.
- Nathan Howell*



Favorite Varieties

Asian greens-Tatsoi, Tokyo Bekana, Mizuna, Komatsuna
Asparagus-Jersey Giant
Beans-Roma II, Jade II
Beets-Bolder, Merlin, Zeppo
Broccoli-Arcadia, Green Magic, Blue Wind, Gypsy
Brussels sprouts-Diablo, Hestia, Churchill & Jade Cross, Franklin
Cabbage-Bronco, Tendersweet, Green Presto, Storage No. 4
Carrots-Bolero, Hercules, Kurato
Cauliflower-Snow Crown, Cheddar, Graffiti, Vitaverde, Denali, White Sail
Celery-Tango, Utah 52-70
Chard-Peppermint, Bright Lights, Luculus, Rhubarb
Chinese cabbage-Blue
Collards-Vates
Sweet corn-Obsession II
Cucumber-Market More 76, Slice More, Stonewall
Eggplant-Epic
Kohlrabi-Winner, Grand Duke, Kassak
Kale-Winterbor, Toscano, Red Russian, Siberian, Blue Curled Scotch
Leeks-Lancelot
Lettuce leaf-Red Sail, Black Seeded Simpson, Red and Green Salad Bowl, Green Ice
Lettuce romaine-Jericho
Lettuce head-Raider
Muskmelon-Athena, Aphrodite
Mustard-Ruby Streaks, Spicy Green, Tah Tsai, Southern Giant Curled, Red Giant
Okra-Red Burgundy, Jambalaya
Onion-Candy, Texas Super Sweet
Peas-Sugar Sprint
Peppers-Bois, Biscayne, Aruba, Gypsy, Mama Mia Giallo, Felicity, Cubanelle, Serrano del Sol, Lemon Drop, Mosquetero, Mucho, Peperoncino, Jimmy Nardello's, 1884
Pak Choi-Prie, Mei Qing Choi
Potatoes-Eva, Kennebec, Red Pontiac, Yukon Gold
Radish-Roxanne, Sparkler
Rutabaga-Joan, Mars
Spinach-Palco, Regiment, Avon
Tomatoes-*see June story for list
Summer squash-Fortune, Multi Pik, Zephyr, Cash Flow, Golden Glory
Turnips-Seven Top, Purple Top White Globe, Hakurei
Watermelon-Sangria, Yellow Doll
Winter squash-Red Kuri, Thelma Sanders Sweet Potato, Bush Delicata, Sunshine, Angel Hair, Shokichi Green, Button Fly

<i>Crop</i>	planting dates	planting dates
	<i>Spring</i>	<i>Fall</i>
beets (<i>seed</i>)	April 1	August 1
broccoli (<i>plants</i>)	March 15	August 15
Brussels sprouts (<i>plants</i>)	---	August 1
cabbage (<i>plants</i>)	March 1	August 1
carrots (<i>seeds</i>)	March 10	August 5
cauliflower (<i>plants</i>)	March 20	August 1
celery (<i>plants</i>)	---	July 15
chard (<i>plants</i>)	March 15	August 15
collards (<i>plants</i>)	March 1	August 1
kale (<i>plants</i>)	March 1	August 1
kohlrabi (<i>plants</i>)	March 1	August 15
lettuce leaf (<i>plants</i>)	March 15	August 10
lettuce head (<i>plant</i>)	March 10	August 15
mustard greens (<i>seed</i>)	March 15	August 1
onions (<i>plant</i>)	March 10	---
potatoes (<i>starts</i>)	March 15	July 10
radish (<i>seed</i>)	March 1	September 15
rutabaga (<i>seed</i>)	---	August 1
spinach (<i>seed</i>)	March 1	September 15
turnips (<i>seed</i>)	March 1	August 10
winter squash (<i>plant</i>)	---	July 15

Lettuce	🌱	spring, fall, winter
Mushrooms	🍄	spring, summer
Okra	🍆	summer
Onion	🧅	spring, summer, fall, winter
Pea Shoots	🌱	spring
Pear	🍐	fall
Pepper	🌶️	fall
Plum	🍑	summer
Potato	🥔	spring, summer, fall
Pumpkin	🎃	fall
Radish	🌱	spring, fall, winter
Raspberries	🍓	summer
Rhubarb	🌱	spring
Rutabaga	🥕	fall, winter
Scallion	🌱	spring, fall
Shallots	🧅	spring, fall
Spinach	🌱	spring, fall, winter
Strawberries	🍓	spring
Sugar Snap Peas	🌱	spring
Summer Squash	🍆	summer
Sweet Corn	🌽	summer
Sweet Potato	🍠	fall, winter
Tomato	🍅	fall, winter
Turnip	🌱	spring, fall, winter
Watermelon	🍉	summer
Zucchini	🍆	summer





BROCCOLI



DID YOU KNOW?

- Broccoli is a cruciferous vegetable, known for its many cancer-fighting compounds.
- Its name originates from the Italian word, broccolo, meaning "the flowering top of a cabbage."
- The heads, stalks, and leaves of broccoli are all edible and nutritious.
- Just one cup of raw broccoli is a great way to get your daily serving of vitamin C without having to eat fruit.

WINTER SQUASH



DID YOU KNOW?

- Winter squash is technically a species of fruit that comes in many different shapes and colors, including tan, orange, and blue.
- Squash is one of the oldest known crops, estimated up to 10,000 years by some sites in Mexico.
- Do you like pumpkin seeds? Seeds from the center of any winter squash can be scooped out and roasted for a healthy snack!

TURNIP



DID YOU KNOW?

- Turnip is a root vegetable, sharing some of the same health benefits of its relatives, cabbage, kale, and Brussels sprouts.
- The smaller, "baby turnips" have the sweetest flavor, while the larger turnips have a woodier taste.
- Don't discard the leafy tops! Turnip greens contain even more nutrients than the root itself.

KALE

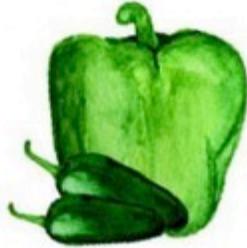


DID YOU KNOW?

- Kale is one of the most nutrient dense foods on the planet, packed with vitamins and minerals, antioxidants, protein, and healthy fats!
- Kale contains more vitamin C than an orange and as much calcium as milk!
- Pair kale with a healthy fat source, like olive oil or avocado, to help your body absorb kale's fat-soluble nutrients.



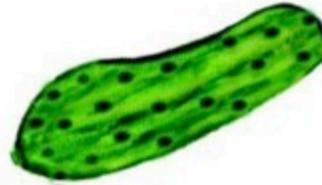
PEPPERS



DID YOU KNOW?

- We are actually fruits but are prepared and served like vegetables.
- If we're left on the plant long enough, our color turns from green to red or gold.

CUCUMBER



DID YOU KNOW?

- Similar to watermelon, cucumber is made of 95% water to help you stay hydrated.
- Don't forget to leave the skin on your cucumbers; it contains vitamin C as well as other important nutrients.
- Cucumbers can also be used as a natural remedy to relieve sunburn, soothe tired eyes, and freshen breath!

SQUASH



DID YOU KNOW?

- This nutrient-dense summer squash appears on your dinner plate as a vegetable, but it is botanically considered a fruit!
- The golden flower that grows on the end of squash is edible and prepared by chefs as a delicacy.

KALE



DID YOU KNOW?

- We've been around for over 2,000 years. Kale was popular in ancient Greece, Rome, and during the Middle Ages.
- We're related to cabbage, brussels sprouts and collard greens.
- One cup of raw kale contains over 100% of your daily recommended intake of vitamins A, C and K.

NEEDMOREACRES.COM  

Copies of the Need More Acres Specialty Crop Guide can be obtained by contacting Michelle Howell. <http://needmoreacres.com/contact/>

Project #4 Honey Extracting Equipment

Project Summary

The project was to promote beekeeping in Barren and surrounding counties by providing producers a method of extracting their honey by using an extracting machine which removes the honey without destroying the comb. This equipment would be maintained by the Barren County Beekeepers Association, a non-profit organization that promotes the education of Beekeeping in south central Kentucky. One of the largest investments for smaller operations is the cost of equipment to harvest their honey crop.

Project Approach

This project never achieved its fullest potential due to the leadership issues of the subgrantee organization and its ultimate dissolution as noted in the *Additional Information* section.

Goals and Outcomes Achieved

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
1	Educational Demonstration	Education of Beekeepers to extraction practices
2	Extraction of Honey	Increased and more efficient honey production

Beneficiaries

Equipment was utilized by 6 different beekeepers to harvest a total of 60 gallons of honey. 60 gallons of honey equals 720 pounds of honey. Local honey is marketed at \$6.00 to \$8.00 dollars per pound for a total value of \$4320.00 to \$5760.00. Having this equipment is a great benefit to the local beekeeping community and is highly appreciated having it to use.

Lessons Learned

It is unlikely that the Kentucky Department of Agriculture will attempt to execute a project of this size and nature in the future. The cost of administering a grant of such a small scope exceeds its benefits to the specialty crop producers of the Commonwealth of Kentucky.

Contact Person

John Pace, 270-651-6507, jpace@glasgow.ky.com

Additional Information (Optional)

**KENTUCKY SECRETARY OF STATE
P.O.BOX 718
FRANKFORT, KY 40602**



First Class Mail
US Postage Paid
Frankfort, KY
Permit No. 888

Certificate of Dissolution

I, Alison Lundergan Grimes, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

IMPORTANT NOTICE

BARREN COUNTY BEEKEEPERS ASSOCIATION, INC.

**BARREN COUNTY BEEKEEPERS ASSOCIATION, INC.
P.O. BOX 577
GLASGOW KY 42142**

did not file its 2016 annual report within sixty days after it was due. Accordingly, the Secretary of State administratively dissolved the company on October 1, 2016.



Alison Lundergan Grimes
Alison Lundergan Grimes
Secretary of State

Project #5 Selection and Preservation of Uba Tuba, a Specialty Pepper

Project Summary

Because of its shape, color, texture and flavor, the specialty pepper Uba Tuba (*Capsicum baccatum*) attracts attention of farmers, chefs and consumers. However, it is difficult to grow, and under Kentucky conditions, production tends to be very late in the season. To improve earliness and total yield of Uba Tuba, two rounds of individual plant selection were conducted. The feasibility of producing extended shelf-life products by canning, pickling and dehydrating these specialty peppers was assessed and cooperators evaluated production, processing and marketing of this specialty pepper.

Project Approach

#	Objective	Completed?	
		Yes	No*
1	Conduct two rounds of single plant selection for early yield	x	
2	Evaluate canning, pickling and dehydration (paprika) as means for value added processing	x	
3	Expand Uba Tuba production on selected farms in Kentucky	x	
4			

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
1	As a result of pure line selection, produced 12 advanced lines of Uba Tuba.	Direct result of completing Objective 1. These lines, which may be better adapted to Kentucky conditions, will be made available for testing and increase by cooperators
2	Produced and evaluated canned, pickled products from Uba Tuba peppers. Products included whole peppers, sliced peppers, and salsa.	Direct result of completing Objective 2. Most products have long shelf life. Texture can be considerably improved by use of pickling lime. Consumer acceptance of pickled products is high. Published recipes for preservation.
3	Developed and evaluated paprika (dehydrated and ground) from Uba Tuba peppers. Conditions for production of high culinary quality were defined.	Direct result of completing Objective 2. Paprika made from Uba Tuba peppers is very high quality, having unique culinary qualities as assessed by Chefs across the U.S. Low temperatures during drying must be used to maintain paprika quality. However, freeze drying is unsatisfactory, producing paprika of very poor quality. Paprika produced from fruit containing seeds has better acceptance than paprika produced solely from pepper flesh. Smoking of paprika is feasible and the

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
		evaluation of smoked Uba Tuba paprika is ongoing.
4	Introduced Uba Tuba peppers on 12 Kentucky farms.	Direct result of completing Objective 2. A few cooperators successfully sold small amounts of peppers. Because of its unique appearance, Uba Tuba attracts attention at farmers markets. For some producers, the late production of Uba Tuba occurs after their local farmer's market has closed for the season.

CHALLENGES AND DEVELOPMENTS

#	Challenge or Development	Corrective Action or Project Change
1	Paprika from Uba Tuba has caught the attention of specialty food manufacturers because of its unique quality. They would like to acquire more than 500 lbs. of paprika to begin commercial production of charcuterie using Uba Tuba paprika as a main ingredient. Cheese manufactures have also expressed a desire to develop boutique cheeses using Uba Tuba paprika as an ingredient.	The potential demand for Uba Tuba paprika is high. However, the ability to meet this demand is constrained because of expensive, unreliable field production, slow drying time required for paprika associated with maintenance of product quality, lack of large commercial drying facilities and because of potential food safety issues during low temperature drying. How to take advantage of the burgeoning interest in Uba Tuba paprika opportunity remains under study.
2	Many farmers markets in Kentucky are quite seasonal, with sales dropping dramatically in August, coincident with the beginning of school. The absence of vibrant sales in late September and early October limits sales of produce that is produced late in the season	Hopefully, over time, local markets will continue to expand, especially the length of the selling season. Alternately, over time, as producers become more adept at growing Uba Tuba, they may be able to develop alternate outlets for Uba Tuba such as sales to restaurants, etc.

Goals and Outcomes Achieved

Continuation and Dissemination of Results

Recipes for preservation of Uba Tuba have been published:
 Bob Perry, Melissa Morgan, Leann Slaughter, John Snyder, John Strang and Chris Smigell. 2018. Uba Tuba Processing Recipes. HortFact-7503. Horticulture Extension, College of Agriculture, University of Kentucky.
<http://www.uky.edu/hort/sites/www.uky.edu.hort/files/documents/HortFact7503.pdf>

In collaboration with the Center for Crop Diversification at the University of Kentucky, a preliminary budget for field production of Uba Tuba has been developed. This budget will be

used by extension specialist in discussing opportunities for Uba Tuba production by Kentucky farmers.

Single plant selection has resulted in the production of 12 genetically distinct and improved lines of Uba Tuba that may have value on Kentucky farms. Going forward we will attempt to place these lines with growers interested in increasing the seed for each line or interested in additional evaluation of these improved lines.

Relationships with current cooperators will be maintained, including meeting with them annually at the Kentucky Fruit and Vegetable Conference. Additional cooperators will be sought, especially for seed increase.

Farmers/cooperators enlisted in the project who grew, processed and marketed fresh or processed Uba Tuba peppers were interviewed by the Project Directors.

Commercial production of paprika from Uba Tuba will be studied and pursued.

Beneficiaries

Number of project beneficiaries:12

Lessons Learned

Increased sales attributable to production, processing and marketing of Uba Tuba are modest to date. Among all cooperators increased sales averaged less than \$200 per farm.

Contact Person

John C. Snyder, 859-257-5635, snyder@uky.edu

Additional Information (Optional)

Expenditures

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel	21413.00	18843.00
Fringe Benefits		2574.25
Travel	1800.00	1327.32
Equipment		
Supplies	22200.00	13872.09
Contractual		
Other		
Direct Costs Sub-Total	45213.00	36616.66
Indirect Costs	4541.00	3661.68

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Total Federal Costs	49954.00	40278.34

PROGRAM INCOME (IF APPLICABLE)
NOT APPLICABLE

Project #6 Commercialization of Early Flowering Chia

Project Summary

Kentucky Specialty Grains (KSG) is a producer-owned company partnering with the University of Kentucky, and other stakeholders to commercialize the production of Early Flowering Chia, *Salvia hispanica*, as a new crop opportunity for Kentucky producers and US food manufacturers. Early Flowering Chia was developed through a breeding program at the University of Kentucky and was granted patent in 2014, US patent # 8,586,831. Recognizing the potential opportunity for Kentucky producers, KSG was formed in 2012 to commercialize E.F. Chia.

Since chia is a new crop in the US, KSG is developing the entire production and distribution supply chain necessary for US food manufacturers to purchase directly from our growers, who will also be owners of the company. Through our early market development work, numerous US food manufacturers indicate they would replace their imported supply of chia with US grown when it becomes more widely available. To realize this opportunity, KSG set out to develop the protocol and process necessary to build a US supply chain from field to food for the benefit of U.S. farmers, food manufacturers, and consumers.

The work includes:

- An ongoing chia breeding and improvement program at the Univ. Of Kentucky
- Field trials with production in multiple states to develop best management practices and a grower manual for producers and learn where EF Chia grows well in the U.S.
- Proving the consistent quality and nutrition of U.S. grown E.F. Chia
- Work with USDA IR-4 to obtain labeling of herbicides for use on chia
- Improved recognition of U.S. grown chia with food manufacturers and retail consumers
- Targeted and direct marketing with existing and potential customers

This project helped address many challenges and opportunities that have led to much success and new opportunities for growers in Kentucky and other states. Much of this work is in the building stages (R&D) for the development of EF Chia but it is critical to expanding commercialization.

Project Approach

#	Objective	Completed?	
		Yes	No*
1	Improve Market Presence	*	
2	Improved Production Guidelines & Grower Manual For Producers	*	
3	Prove Nutrition & Food Safety	*	
4	Improved Chia Lines From UK	*	
5	KSG Grower Field Day	*	
6	UK Seed Development & Supply Program	*	

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
1	#1,2,3 Developed and Launched Heartland Chia Website to better reach food manufacturers and launch retail product sales	Online Retail Sales Technical Data Sheets Available to Customers Description and Information about products available and packaging
2	#1 Employed Yont's Marketing to develop and launch a messaging campaign	Developed Retail Packaging and Sales Developed Direct Marketing Material to reach food manufacturers & retail consumers Targeted Marketing to influencers to educate them about the benefits of U.S. grown chia
3	#1 Improved Distribution	Working with the following to distribute retail, food service, and commercial quantities of chia: Ohio Valley Food Hub, NFI, Archer Daniels Midland, Stone Mill
4	#1 Attended Expo West, Expo East, & NFI Chicago to meet potential/current customers and expand our customer base	These are large natural food industry trade shows. KSG had two people at each event working to initiate contact with potential chia users and make others aware of U.S. grown chia
5	#2 Field Trials in 5 States Commercial Production in four states	Data about production needs & techniques to use in improving the production guidelines as well as to understand where chia grows best and differences in production requirements in varying locations. Growers with successful trials then become interested in commercial production.
6	#2 Small Block Replicated Trials at Oak Hill Farms and Field Trials In 6 Other States	Information used to improve grower recommendations and to support the following: 1 herbicide labeled for use on chia with 2 more in the process with IR-4 USDA recognized chia as a grain crop for production in the U.S. Crop insurance coverage now available to chia farmers in Kentucky
7	#2 Improved Grower Manual with much better recommendations and details from the ongoing field trials and work at Oak Hill Farms	New and Improved guidelines for growers

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
8	#2 & 5 Hosted farmers, customers, and ag input companies for tours of research at Oak Hill Farms	Improved marketing to customers tied in to #1 Work on herbicide labeling with chemical companies visiting our trials Growers visited to see and discuss chia production to better understand what is involved Specialty product (input) manufacturers visited to evaluate their products on chia
9	#3 Prove Nutritional Quality & Food Safety Multiple tests were conducted at third party labs and at Dr. Hildebrand's lab at UK to show that U.S. grown chia is as good or superior to chia from other supply points	Compared multiple years and locations of U.S. grown chia to imported chia for nutritional quality & safety. This provided the data to prove U.S. grown chia is as good or better than imported. We developed a quality assurance program with each lot of U.S. grown chia being traceable to the field it was grown in, assured nutritional minimums, microbial and safety standards, and purity standards. This is now used in the technical data information and marketing information
10	#4 Improved Lined from UK Composition testing of new lines (tied to #3) New varieties in development with higher omega-3 and higher protein as well as better seed retention (lower seed loss prior to harvest)	Varieties of chia with improved agronomic traits for growers and new varieties with unique composition that will be the only chia with higher omega-3 or higher protein levels
11	#6 Dr. Tim Phillips at UK is working with the new lines to do seed increases to get enough seed for growers to plant	Increased selected lines of chia and selected for disease resistance in all lines. The see Dr. Phillips produces is then planted by farmers.

Goals and Outcomes Achieved

Goals and Outcomes	Quantifiable Results
Sustainable Production Practices Trials show E.F. Chia needs about 25% of the water and fertilize of corn	Decreased Fertilize and Irrigation Recommendations for Growers
Used our data to work with chemical manufacturers (BASF, FMC, Valent) through the USDA IR-4 Program for weed control	1 herbicide labeled for use 2 more awaiting expected approval
Improved Market Presence	8 new wholesale customers

Retail Sales	12 oz. retail package launched Package design, co-packing, distribution In 4 retail small chain groceries, in talks with Whole Food, Kroger & Wild Oats
Improved Distribution	Began working with Ohio Valley Food Hub, NFI, Archer Daniels Midland, Stone Mill to store and distribute U.S. grown chia
Food Safety & Industry Certifications	Kosher Certification for U.S. grown chia
	Safety Seed Certified
	Gluten Free
	Kentucky Proud
	HACCP
	Material Safety Data Sheet
	Vegan
Increased Production	Commercial Production in 4 states
	Organic Production
Improved Chia Lines from UK	5 New Lines including higher omega-3, white seeded lines, and larger seed size varieties
Field Day (Information Transfer)	Hosted 25+ farmers, Industry Leaders, potential and current customers at research plots in Ky 100+ phone calls and emails to exchange information with potential growers in multiple states

Data Collection

Much of the data collected was about better production methods from the research trials at Oak Hill Farms. This was accomplished through replicated small block research trials into learning how to grow better EF Chia in the U.S. For the two years during this grant period, we evaluated row spacing, planting density in various row spacings, planting methods, the timing of planting in spring, fertilizer demand for nitrogen, potash, phosphate, and micro-nutrients, timing of nitrogen application at various rates and types of nitrogen, herbicide trials to provide data to IR-4 for herbicide requests, and evaluation of new lines from the UK breeding program.

Trials were planted with standard equipment, various protocols were managed and applied by hand where relevant, and the individual blocks were harvested using a Winterstieger plot combine. The grain collected from individual samples was weighed, evaluated and stored for further use if needed.

The data was evaluated using statistical analysis to determine differences that were used to improve recommendations that we make to growers and were incorporated into an improved grower protocol and manual. This research provided efficacy data to support herbicide labeling requests to the IR-4 program. Data gathered was used to support food safety and nutritional data testing to prove the quality of U.S. grown EF Chia which is now used with customers. We changed the timing of planting to recommend earlier planting based on yields in the trials. We also changed the recommended seeding rates based on trial data. The most beneficial change in terms of cost to the

grower and the environment was reducing the recommended fertilizer need based on data collected as part of this project. We reduced nitrogen recommendations 25% and cut phosphorus and potassium recommendations by 50%.

We also evaluate data related to sales of U.S. grown EF Chia in both the wholesale and retail markets to better reach customers and target higher value customers in our marketing efforts. We look at money spent on promotion of U.S. grown chia in various ways to evaluate the effectiveness.

The University of Kentucky breeding and seed development programs conduct NIR analysis on new lines to help evaluate composition and desirable traits faster in the lab than we can in the field. They are conducting field trials similar to Oak Hill Farms with both existing and new lines. All of the data they gather is used to plan for the future of U.S. grown chia.

Beneficiaries

Number of project beneficiaries:.....21 Farmers, 30-40 U.S. food Manufacturers, 4 Retail Grocery Chains

Lessons Learned

Begin with a good list of your most important needs, prioritize these, and then build goals to address these needs. Target the things that may be the hardest for you to accomplish alone and use this program to leverage outside assistance in addressing the item. Address the items in a progressive order, building on what you learn and be ready to change the project if early work leads to unexpected results. When you have limited funds, private or grant, use them where you can get the most impact to build for the future and move forward.

Contact Person

Chris Kummer, 270-586-8705, kummer.chris@yahoo.com

Additional Information (Optional)

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel	0	0
Fringe Benefits	0	0
Travel	6,350	6,254.48
Equipment	0	0
Supplies	4,000	5,488.70
Contractual	33,500	30,190.00
Other	5,825	7,741.82
Direct Costs Sub-Total	49,675	49,675.00
Indirect Costs	0	
Total Federal Costs	49,675	49,675

Please see our website at: www.heartlandchia.com

http://www.franklinfavorite.com/news/local/article_e73b1a51-9e13-514c-a7ee-8158b1cc80e8.html

<https://jennifer-elwell-59j.squarespace.com/s/Fall-Research-2017-w.pdf>

Chia Star Commits to Buying US Grown Chia:

<https://www.bevnet.com/news/2017/chia-star-commits-use-u-s-grown-chia>

US Chia Company

<https://uschia.com/pages/about-us-chia>

University of Kentucky: <http://www.uky.edu/ccd/production/crop-resources/gffof/chia>

We can provide a large amount of data if you desire but in order to not create a huge document here we have included only a few items below.



5 acre small block research trial at Oak Hill Farms



EF Chia trial in Oregon

Project #7 Developing Center for Crop Diversification specialty crop resources to aid farmers seeking to diversify

Project Summary

Kentucky is home to 53,967 farms of fewer than 140 acres (Census of Agriculture, 2012). In 2014, sales of Kentucky horticulture products, including fruits, vegetables and nursery crops, were an estimated \$132.5 million (Woods et al., 2014). The growth of the local foods movement offers farmers with small acreages new opportunities to develop profitable enterprises, but only if they have the production and marketing expertise required to grow and sell crops that are in high demand. The University of Kentucky Center for Crop Diversification's (CCD) crop profiles are designed to give farmers the production and marketing information they need to make decisions about which crops are best suited for their enterprises. With direct markets continuing to bring growth to produce markets in Kentucky, growers need to be up to date on crop varieties, production practices, and crop budgets. They also need to know which marketing channels are available to them and how they work. This project developed new resources and updated existing resources available through the CCD to help meet Kentucky farmers' needs.

Project Approach

#	Objective	Completed?	
		Yes	No*
1	Develop new extension materials, including crop profiles and accompanying podcasts on specialty crops of interest to Kentucky producers, and news articles that will benefit those producers.		X
2	Develop updated extension resources, including production budgets on key specialty crops and 66 of the CCD's crop and marketing profiles, to provide up-to-date production and marketing information to Kentucky's specialty crop growers. Budgets and profiles will be available through the CCD website, through county extension offices, and at meetings and field days around Kentucky.	X	
3	Conduct a workshop for growers about the process of choosing which specialty crops to grow. Resources developed for this workshop will include a publication entitled <i>What to Think About Before You Plant</i> , and an updated version of the University of Kentucky's <i>PRIMER for Selecting New Enterprises for Your Farm</i> .		X

Goals and Outcomes Achieved

Accomplishments

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
1	Objective 1: Nine new crop profiles/fact sheets were developed, and eight have been posted on the CCD website. A fact sheet on the Food Safety Modernization Act was	Resources developed include crop profiles/fact sheets on maple syrup production, lavender, irrigation systems, weed management, vegetable transplant

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
	<p>delayed in review and became obsolete before it could be finalized. Fifteen podcasts have been developed and posted on the CCD website; an additional podcast is under development. Twelve newsletter articles were written by our contractor, Matt Ernst, and published in CCD newsletters during 2016 and 2017. Crop profiles and fact sheets can be accessed from the CCD production page at http://www.uky.edu/ccd/production. Podcasts are available at http://www.uky.edu/ccd/training/podcasts. Newsletters can be accessed at http://www.uky.edu/ccd/newsletter.</p>	<p>production, pecans, walnuts and Malabar spinach. Newsletter article topics include Group GAP, a USDA CSA publication, Fresh Stop Markets, the Southern Ohio Growers Co-op, Kentucky Farm to Table, farmers markets, organic “hotspots,” the green industry in KY and the U.S. (2 articles), high tunnels in KY, fall and seasonal ornamentals, and a What to Think About Before You Plant article based on the CCD’s 2017 workshop at the KY Fruit and Vegetable Conference. Podcasts have been posted on agritourism, apples, beekeeping, Christmas trees, CSA, cut flowers, grapes, high tunnel production, jujube, the KY Horticulture Council, low tunnel production, maple syrup production, plasticulture strawberries, producer grants and sweet cherries. These resources help to increase growers’ knowledge regarding specialty crop production and marketing, and help them learn how to select which specialty crop or crops to grow.</p>
2	<p>Objective 2: 66 crop/marketing profiles and fact sheets were updated by Ernst in 2016 and 2017. A crop profile on heirloom vegetables was later developed as two profiles, heirloom beans and heirloom tomatoes, as part of a 2016 KYSCBG. Crop budgets for blackberries (Blackberry Cost & Return Estimates, ID-149), asparagus and grapes (vinifera wine grapes, French-American hybrid and American wine grapes, and table grapes) were updated and posted on the CCD website. Approximately 1,000 paper copies of new and updated profiles and updated budgets were distributed at conferences/meetings and field days around the state since our last annual report in 2017, and a total of approximately 3,450 copies have been distributed since the beginning of this project, exceeding our goal of 2,500. Crop profiles and fact sheets can be accessed from the CCD production page at http://www.uky.edu/ccd/production. Crop</p>	<p>See Table 1 (Page 4) for a list of updated crop/marketing profiles and fact sheets. These profiles help to increase growers’ knowledge about specialty crop production and marketing. Budgets make specialty crop growers aware of expenses associated with production of specific crops and of potential net return for a variety of specialty crops. Paper copies of these resources are distributed to specialty crop growers by county extension offices throughout Kentucky, and by CCD staff at meetings and field days. Extension agents from counties across Kentucky who have attended these conferences and field days have indicated that the CCD crop profiles are a tremendous asset as they work with clients who are considering trying a new specialty crop, or who are new to farming. Extension specialists at UK and other universities in the region have noted the importance of our</p>

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
	budgets are available at http://www.uky.edu/ccd/tools/budgets .	updated crop budgets, as this information is not updated regularly in many states.
3	<p>Objective 3: In 2016, Ernst developed a publication entitled <i>What to Think About Before You Plant</i>, which was the subject of a workshop conducted by the CCD at the January 2017 Kentucky Fruit and Vegetable Conference in Lexington. Thirty-five people attended the workshop, which included a presentation by UK Ag Economist Dr. Tim Woods, and a panel of buyers, growers and a Community Farm Alliance Farmers Market Support Program manager. Buyers included the manager of a Kentucky produce auction, the produce manager for a Lexington food co-op, and a buyer for a regional produce company. The growers on the panel sell through a farmers market and had recently met with the food co-op produce manager and made arrangements to sell there as well. An extension agent who attended the workshop indicated that it was the best session he attended at the conference. <i>What to Think About Before You Plant</i> was also the basis of a two-part webinar series for growers in March of 2017, one for small-scale, direct-to-consumer markets and one for large and commercial markets. Twenty-five people participated in the webinar for small-scale markets, and 13 participated in the webinar for large-scale markets. Also, an extension agent in-service training webinar was conducted in March of 2017, with 23 agents participating. All three webinars were recorded and posted on YouTube, and links to the grower webinars were added to the CCD website. The webinar recordings can be accessed at http://www.uky.edu/ccd/marketing/general-resources/byr. The webinar recordings have been viewed 121 times (Direct Markets), 61 times (Large & Commercial Markets), and 15 times (agent training).</p>	The What to Think About Before You Plant workshop offered growers and extension agents an opportunity to hear from a UK marketing expert about marketing options in Kentucky, and to hear from a panel of growers and buyers about their experiences. The panel offered new and experienced growers, and the extension agents who work with them, an opportunity to learn about the needs of buyers when dealing with local growers, and the steps growers can take to enhance their chances for success when selling at farmers markets, at produce auctions, to grocery stores and to distributors.

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator	
Table 1.			
Asparagus	Garlic	Organic brambles	Specialty melons
Baby corn	Ginseng	Organic lettuce	Starting a nursery business
Baby vegetables	Goldenseal	Organic sweet corn	Stevia
Beekeeping/honey	Gourmet mushrooms	Organic tomatoes	Tomatillo
Cabbage	Greenhouse cut flowers	Peas	Truffles
Catnip	Greenhouse tomato	Persimmon	Woody cuts
Cherry	Heirloom vegetables	Plum	CSA
Chinese chestnuts	High tunnel greens	Potato	KY Buy Local
Chrysanthemums	High tunnel tomatoes	Pot-in-pot nursery	KY MarketMaker
Coneflower	Hispanic vegetables	Propagation nursery	Marketing Crops to Schools and Institutions
Container nursery	Hops	Raspberry	Marketing to Restaurants
Cranberry	Hydroponic lettuce	Risk management	Marketing to Retailers
Cucumber	Leafy greens	Rhubarb	MarketReady Program
Currant/Gooseberry	Okra	Romaine lettuce	Regional Food Hubs
Edamame	Onions	Root crops	Roadside Farm Markets
Eggplant	Organic apples*	Serviceberry	
Field nursery	Organic asparagus	Snap beans	<i>*Undergoing additional review</i>

Challenges and Developments

#	Challenge or Development	Corrective Action or Project Change
1	Objective 1 - A new fact sheet on the Food Safety Modernization Act was developed in 2016, but was not reviewed in a timely manner, and has not been published and posted on the CCD website.	Because of the development of new food safety resources and trainings at the University of Kentucky while this fact sheet awaited review, it became outdated before it could be published. The CCD's Brett Wolff has developed a food safety resources section of the CCD website (http://www.uky.edu/ccd/foodsafety) to provide growers and extension agents with up-to-date information

#	Challenge or Development	Corrective Action or Project Change
		about this topic, and these resources are more extensive and helpful than the fact sheet would have been.
2	Objective 1 - A new podcast featuring Wayne Sirles, president of Rendleman Orchards in IL, a diversified operation that also grows vegetables and flowers, has been delayed because Mr. Sirles had to reschedule the interview.	This podcast will be posted on the CCD website as soon as possible.
3	Objective 2 – A crop profile on organic apples has been updated, but has not yet been posted online due to a lack of consensus among reviewers.	The PI is seeking an additional reviewer to determine the appropriate modifications to this profile.
4	Objective 2 – A simple update of blackberry production budgets by our contractor was expanded to an update of the detailed UK publication ID-149, <i>Kentucky Blackberry Cost and Return Estimates</i> , which required additional work by our contractor. Reviews of Ernst’s work on updating detailed budget spreadsheets for thorny, thornless erect and thornless semi-erect blackberries took longer than anticipated, and involved UK Extension Fruit Specialist John Strang, UK Horticulture Specialist Shawn Wright, UK Extension Entomologist Ric Bessin, and UK Extension Plant Pathologist Nicole Ward Gauthier. Reviews were completed in September 2017, and changes were made based on those reviews. Agricultural Communications formatted the final publication, and it was posted in October 2017 at http://www2.ca.uky.edu/agcomm/pubs/ID/ID149/ID149.pdf	To pay our contractor an additional \$500 for his more extensive work on the blackberry budgets, we received permission to eliminate two of the 18 podcasts that were part of our original proposal, which provided \$200. We also did not use \$300 for supplies originally budgeted for the What to Think About Before You Plant Workshop held in January 2017. This money was used instead to pay our contractor for the extra budget work. An updated ID-149 provides information for Kentucky blackberry growers that is more detailed and more useful than the simple budget that was originally planned. Updating ID-149 did not require a budget change of more than 20 percent.
5	Objective 3 - Ernst updated the publication <i>PRIMER for Selecting New Enterprises for Your Farm</i> , but the updated version is still awaiting review from the original authors.	We provided copies of the 2000 edition of the <i>PRIMER</i> at the What to Think About Before You Plant Workshop in January of 2017. We will continue requesting a review of the updated version and will make it available online once it has been finalized.
6	The CCD’s Brett Wolff attended the 2017 Illinois Specialty Crops and Organic Conference and purchased literature table space to display CCD resources. The trip gave him an opportunity to attend educational sessions and network with conference speakers and growers to help improve CCD resources.	Funds for attending the Illinois conference and buying literature table space were available because Wolff received free registrations to attend the SSAWG Conference in Lexington in 2016 and 2017, which we had

#	Challenge or Development	Corrective Action or Project Change
		budgeted for in this grant. Travel funds for the trip were available because we had budgeted for travel to in-state events that we did not attend due to bad weather and illness (Barbourville festival), and the expectation of a home gardening audience rather than commercial specialty crop growers (Princeton field day).
7	Delays in obtaining reviews of publications were a significant challenge. This problem was exacerbated in May of 2017 by the departure of UK's extension vegetable specialist, who was not replaced until March of 2018.	The PI sought and obtained reviews from UK's extension horticulture specialist in Eastern Kentucky; a former UK extension vegetable specialist who now works as an extension specialist for international & sustainable agriculture in the UK Department of Horticulture; faculty and staff at other universities in the region; and from UK extension associates involved in specialty crop work.
8	A resources use survey planned after the second year of this project was delayed.	A draft of the survey is complete, and our goal is to distribute it during the fall of 2018.

Beneficiaries

Number of project beneficiaries:..... 16,500

Lessons Learned

If your project involves publications that require reviews, try to line up a group of potential reviewers in advance, and look beyond the walls of your own institution. Also, try to anticipate topics that are complex and subject to change as they might move beyond your original plans for resources and render them obsolete.

Contact Person

Christy Cassady, 859-257-1477, cgcass0@uky.edu

Additional Information

We will continue making extension agents and others who work with Kentucky specialty crop growers aware of our resources, making them available online and in print. We will continue disseminating the resources developed through this project at conferences, meetings and field days throughout Kentucky.

Project #8: Local Food from Local Farms Making Local Decisions A Project of The Berry Center in Partnership with the Organic Association of Kentucky, Louisville Metro Government, Kentucky Center for Agriculture and Rural Development, and the Agrarian Consortium

Project Summary

The Local Food From Local Farms Making Local Decisions SCBG project was designed to work with farmers throughout the Louisville Foodshed to identify issues that prevent them from entering short-chain supply markets and to identify ways to overcome those barriers.

The Berry Center (the project lead) has formally withdrawn from Kentucky’s Specialty Crop Block program, citing a need to focus their efforts on larger projects that the Center is currently undertaking

Project Approach

#	Challenge or Development	Corrective Action or Project Change
1	Subgrantee was not capable of meeting the requirements of the Specialty Crop Block Grant Program	Subgrantee relinquished funds, KDA was unable to expend the funds within the grant period

Goals and Outcomes Achieved

NOT APPLICABLE

Beneficiaries

NOT APPLICABLE

Lessons Learned

The Kentucky Department of Agriculture continues to improve its outreach and education as related to the Specialty Crop Block grant program

Contact Person

Katie Ellis, 859-583-6786, katieellis@berrycenter.org

Additional Information (Optional)

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel		\$1500.00
Fringe Benefits		
Travel		
Equipment		
Supplies		
Contractual		
Other		
Direct Costs Sub-Total		
Indirect Costs		
Total Federal Costs		\$1500.00