

**Kentucky**

**14-SCBGP-KY-0021**

**Kentucky Department of Agriculture  
Final Report**

**December 6, 2017**

**REVISED 08/28/2018**

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## **Project 1: Kentucky Alliance of Boys & Girls Clubs: Seed to Sale Project**

### **Project Summary**

Obesity and poor nutrition is a nation-wide epidemic, particularly for children in Kentucky. The following statewide statistics prove the great need for programs that focus on healthy diet and nutrition for adolescents and the practice of making healthy lifestyle choices.

In 2013:

- 18% of Kentucky adolescents were obese
- 11% Percent of high school students who report they ate vegetables 3 or more times per day (during the 7 days before the survey)
- 78.3% of Kentucky adolescents drank sugar-sweetened beverages (can, bottle or glass of soda or pop) at least one time per day during the 7 days before the survey

\*Source: CDC, Division of Adolescent and School Health. Kentucky, High School Youth Risk Behavior Survey, 2013.

2015 data further proves the need for programming targeting adolescent health.

- 18.5% of Kentucky adolescents were obese
- 32% of Kentucky high-school students described themselves as slightly or very overweight
- 11% Percent of high school students who report they ate vegetables 3 or more times per day (during the 7 days before the survey)
- 21% of high school students reported they ate fruit or drank 100% fruit juices 2 or more times per day (during the 7 days before the survey)
- 76.4% of Kentucky adolescents drank sugar-sweetened beverages (can, bottle or glass of soda or pop) at least one time per day during the 7 days before the survey
- 40.1% of high-school students played video or computer games or used a computer 3 or more hours per day (for something that was not school work on an average school day)

\*Source: CDC, Division of Adolescent and School Health. Kentucky, High School Youth Risk Behavior Survey, 2015.

Good nutrition and physical activity can help prevent obesity and its many health-related consequences, however, opportunities for healthy choices may be restricted by limited access to a selection of and knowledge about fruits and vegetables. The consequences are clear: decreased access to healthy food means people in low-income communities suffer more from diet-related diseases such as diabetes than those in neighborhoods with easy access to fresh fruits and vegetables.



Food insecurity is a significant issue not only for low-income families but all families.

Statistics for the communities we serve across Kentucky include: 2014 County Food Insecurity Rates for the children population (under 18 years old) living in poverty –

- Barren 22.2%
- Butler 26.3%,
- Campbell 17.8%
- Christian 22.2%
- Hardin 20.1%
- Harlan 31.6%
- Jefferson 18.6%
- Kenton 19%
- McCracken 21.3%
- Mason 24.3%
- Simpson 20.8%
- Warren 19.4%

\*Source: [www.feedamerica.org/mapthegap](http://www.feedamerica.org/mapthegap)

Now more than ever, community partners play a critical role in shaping the lives of America's young people. This is where Boys & Girls Clubs are uniquely positioned to make a significant difference. As an out-of-school time provider we have access to the youth who need us most and programs that will help youth develop positive outcomes and achieve great futures. In 2015, the Kentucky Alliance of Boys & Girls Clubs (KA) implemented the statewide Seed to Sale Project at five Club locations (Butler County, Covington, Glasgow, Paducah and Franklin/Simpson) to improve these statistics.

The Seed to Sale program is designed to educate youth, ages 6 – 18, through hands-on experiences and project-based learning about: Agriculture, Health and Economics. Through this program participating youth learn where food comes from, healthy eating habits, healthy cooking, money management, food sales, and marketing. In addition to instruction and garden time, Club members went on field trips to farmers' markets and working farms. The program was modeled after successful pilot projects at the Franklin/Simpson and Parkland Boys & Girls Clubs. Seed to Sale not only focuses on youth education but also engages the wider community in conversations about food insecurity and healthy food consumption.



The original Seed to Sale Project included six months of project planning and six months of hands-on activities, education and marketing with youth in year one. KA received approval to transition from a one year project to a two year project. For the second year, two Club sites (Glasgow & Franklin/Simpson) were selected from the previous year to continue on with the full Seed to Sale program. Both Club sites were eager to engage Club members throughout the spring and summer months in the 2016.

The Club sites that were not selected to participate in the second year of the grant did continue to run a garden and nutrition education program in 2016. These Club organizations were successful in securing local funding and resources to continue the program in a way that best fit the needs of their Club youth, families and communities.

Evidence provided in this final report will display the impact of the overall two year Seed to Sale program that was implemented at Boys & Girls Clubs sites across Kentucky.

## Project Approach

During 2015 & 2016, the Seed to Sale Project introduced 330 Boys & Girls Club members to the different facets of agriculture, and emphasized youth education and training in gardening, retail marketing, food preparation, and nutrition. Project components included field trips to local agriculture businesses and guest speakers, integration into existing curricula, and hands-on gardening activities. The project directly impacted nearly 932 community members through attendance at Club held community events that included: nutrition education, cooking demonstrations and healthy lifestyle workshops. Indirectly, the Seed to Sale program engaged more than 2,500 people including other Club youth, siblings, parents, donors, volunteers, and community neighbors.

One example of programming comes from our Covington Club that delivered a lesson focused on teaching kids about the different types of plants. Club members were given a variety of different seed packets and leaves so they could examine up close and create drawings and leaf tracings. What's more, Club members were taught about the soil-blocking process to understand how plants grow.

During times of inclement weather the program was moved indoors and Club members viewed a video that compared fast food and fresh food. The kids learned the benefits of eating fresh food and how it can cost far less money than fast food. The video attempted to introduce the idea of healthy eating to members who may not know anything about it.

Educational fields played a significant role in the Seed to Sale project as they reinforced lessons learned at the Club and enabled participants to experience a variety of different aspects of the agriculture industry as it relates to their community and region. Below are several examples of field trips the Club members participated over the two year grant period.

The Glasgow Club's field trip to the Barren County Agriculture Festival was the highlight of the program for many Club members. Club members discovered first-hand the importance of local produce and dairy farms and how agriculture was integrated into daily routine. Club members were thrilled with the opportunity to experience how to milk a cow.

The Franklin/Simpson Club set up a booth in the community for Earth Day. Participating Club members shared their experiences about maintaining their Club garden with community members. These same Club members were the main caretakers of a booth at their local farmers' market. Youth managed the entire marketing and food sale process from setting prices to booth display and closing the sale. These activities helped Club members explore the agriculture fields of marketing and food sales.



Over 175 Club members and chaperones attended “Boys & Girls Clubs Day” at the Kentucky State Fair on Friday, August 28, 2015. In 2016, the number of attendees decreased slightly to 165 for the Kentucky State Fair on Friday, August 26. While at the Kentucky State Fair, Club members explored the many agriculture exhibits including: field seed & grain, fruits, honey, vegetables, dairy products, and livestock. The pepper display was one of the Club kids’ favorites! In addition, Club members walked through the Discovery Farm exhibit where they learned about what life is like on a Kentucky farm through several learning stations and personal encounters with various cattle, goats, llamas, sheep and poultry.

### **Partners**

Local nonprofits, farmers, community members and UK Cooperative Extension played a significant role in the success of the Seed to Sale project as they served as guest speakers and assisted youth in developing and maintaining Club gardens.

The Butler County Club partnered with the Amish community and the Butler County Extension Service to gain technical advice to help with the maintenance of their Club garden. In response, the Amish community was kind enough to donate tools for Club kids to use.

Youth at the Franklin/Simpson Club continued to work with local partners to cultivate land, bring crops to market, and promote greater community involvement through nutrition demonstrations. One of their key partners was the Simpson County Extension Service Agents which led lessons on food preparation and introduced Club members to healthy cooking skills. In addition, local farmers donated green pepper and tomato plants, volunteered time and equipment to help prepare various garden spaces.



### **Goals and Outcomes Achieved**

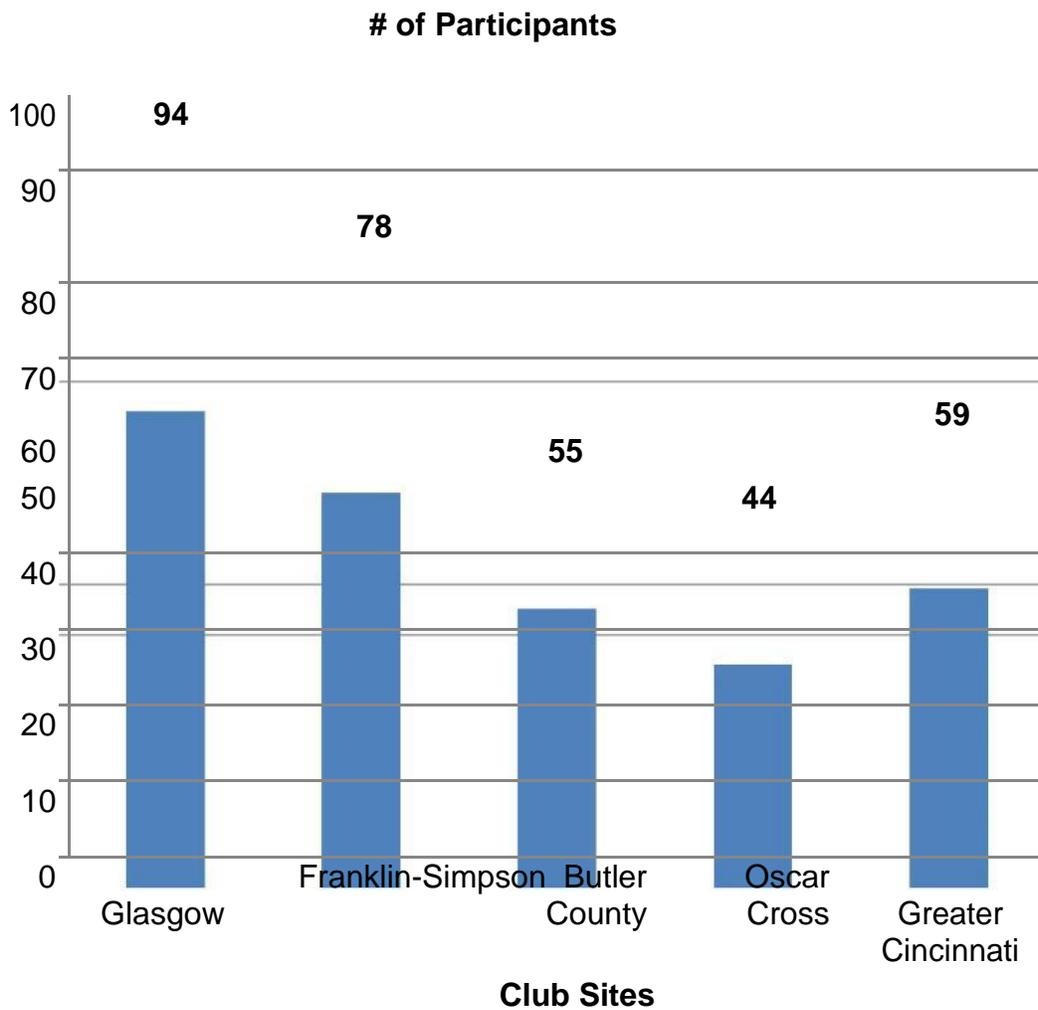
The Seed to Sale project had the following objectives:

- To emphasize youths’ overall education of growing, cultivating, consuming, marketing and selling specialty crops by developing garden projects at 5 Clubs.
- To increase overall community awareness of specialty crops by marketing produce sales at farmers’ markets.
- To create a sustainable project with an established infrastructure and pool of experts across the state to promote cultivation and consumption of specialty crops.



The Seed to Sale Project goals centered on increasing knowledge about fresh specialty crop fruits and vegetables and a long-term understanding about the importance of healthy lifestyle choices. To assess this, KA administered a healthy food IQ test. The food IQ test questions centered around 3 areas: Agriculture, Health and Economics. Around 66% of participating Club members (217 youth) realized an increase on the post test, thus displaying a gain in understanding about agriculture, specialty crops and healthy eating habits.

The Seed to Sale curriculum was designed to allow participating Club sites the flexibility to create and implement their own unique lessons and activities focused on the three main areas. Clubs were given guidelines and grant goals in addition to sample lesson plans and activities based on best practices from the Franklin/Simpson and Parkland Club garden pilot projects.



## Program Activities

Participating Clubs implemented the Seed to Sale program during the spring, summer and fall. A few Clubs ran the program twice during the year due to an influx of new kids attending the Club only during the summer. Overall, 133 sessions were delivered to participating youth at Club sites. In 2015, 91 sessions were delivered and in 2016, at two sites, 42 sessions were delivered. Seed to Sale Project session topics included: garden tools, aeroponic gardening, seed mapping, fruits & vegetables, harvesting, flower gardening, maintenance, composting, jams/jellies, fermentation, herbs, seed starting, transplanting, soil blocking, germination, crop growth, cooking, food sales, marketing, nutrition, worms, bugs, horticulture, ecosystems, irrigation, crop rotation, etc.

KA found that when Clubs members were engaged in the planning process of garden activities and field trips it resulted in more involvement in group discussions and better attitudes for the physical demanding tasks.



To help build program engagement, several Clubs elected a “Garden Manager” each week. This role was responsible for delegating tasks, clean up, tool care and more. A great example of this was at the Oscar Cross Club. Club Member Destiny D. was a very shy introvert. During the 2015 summer Seed to Sale program she was named “Garden Manager” and discovered her voice as a leader. Destiny got to know other Club members better and develop friendships.

The Glasgow Club members gave out to each participant a butterfly kit in which they witnessed first-hand the caterpillar transformation into a butterfly. Staff members were a bit worried that not all the kids would have successful butterfly kits. However, a young Club member named Taygan shared everyday about how her caterpillar changed into a butterfly.



"I like picking the vegetables because when you pick it you feel good about what you have done for the garden by keeping it health."

**ALEX J.**  
Franklin/Simpson Club Member

The Franklin/Simpson Club staff shared that Club youth that you least expect to want to be involved seem to be the ones who enjoy the program the most. Club staff found that moving forward they will get more kids and teens involved and help provide opportunities for them to lead various garden operations instead of choosing the same youth that attend regularly. This program has provided an opportunity to engage Club members and help them step out of their comfort zone and learn about agriculture, health, and business.

As mentioned earlier, the communities that the Clubs are located in across Kentucky face poverty and health related issues. The Seed to Sale Project helped open the doors for communication with Club members, Club families and the community at-large. To emphasize healthy eating habits, several participating Clubs incorporated cooking demonstrations into their garden project.

At the Oscar Cross Club in Paducah, a lesson titled “Super Star Chef” engaged kids in fun interactive food preparation activities focused on fruits and vegetables and their nutritional value. Participants shared with staff on multiple occasions that they often encouraged their parents to buy fruits and vegetables to make the recipes at home that they had learned at the Club. To ensure the children maintain healthy eating habits while at home produce from the garden and recipe cards were sent home with kids. This helped encourage an ongoing healthy lifestyle outside of the Club. Small plants and seeds were also given out to Club families to promote home gardening.

Through the Seed to Sale project, Club members were exposed to specialty crops that they were not familiar with. For example, the Glasgow Club in Barren County created an indoor tower garden with their Club members. Many youth had no clue what zucchini was or how it grew. Club members were excited to witness and learn about the different growth cycles that plants go through. The Glasgow Club grew cherry tomatoes, red peppers, squash, bib lettuce, cucumbers, and parsley.

The Seed to Sale program not only impacted youth directly and indirectly but also reached beyond the Club walls to the surrounding neighborhood through community events such as groundbreaking events, nutrition education workshops, cooking demonstrations, art & garden parties and celebrations. The goal of these events was to engage Club parents, Club families and the community at-large in conversations about food insecurity and healthy food consumption. In 2015, participating Clubs hosted 10 community events related to the garden program where nearly 600 community members attended. During the second year of the program, the Glasgow and Franklin/Simpson Clubs hosted 4 community events in which 575 family members and community members at-large were indirectly impacted. Some examples of community events include: back-to-school bash, Earth Day fair, Kenny Perry golf scramble, and a garden celebration. Club members shared about the garden program with attendees and demonstrated healthy cooking techniques as well as best practices for gardening.

Experience with past projects has shown impacts beyond the direct participants. For example, for every child participating 1-3 family members will likely attend the community workshops, increasing project reach beyond direct participants. Thus, the Seed to Sale project indirectly impacted nearly 985 family members of the 330 direct participants. Likewise, over 2,000 Club members were indirectly impacted from the 330 participants sharing about their first-hand garden and field trip experiences.

Many Clubs hosted cooking classes for parents and invited the community to learn how to cook healthy recipes. Parents were given cookbooks and recipe cards after Club members demonstrated food preparation skills. The Franklin/Simpson Club provided produce to Club families as well as homemade jam and other items that garden Club members created in cooking class. Greater Cincinnati's Covington Club assigned participating Club members to create mini cookbooks filled with recipes they learned in class or researched online. The Club staff reported that parents mentioned they had cooked the recipes at home at the request of their son for the whole family and loved it. The Glasgow Club hosted a celebration at the end of each yearly garden program. Family members and community members in attendance viewed a video of the various garden activities that the children participated in over the summer and fall.

## Outcome Measures

OVERALL GOALS	ACTUAL RESULTS
<b>Goal # 1</b>	
<b>75% and/or at least 238 youth have higher post-test scores</b>	66% (217 youth) displayed higher post-test scores from the 330 total participants
<b>Goal # 2</b>	
<b>At least 238 youth actively participate in at least 75% of project activities</b>	Total of 23 field trips conducted (Each Club offered at least 2 field trips)
<b>Goal # 3</b>	
<b>1,750 Club members, 900 family members, and 600 community members at-large will be indirectly impacted through this project</b>	Over 1,820 Club members and 985 family members, and 932 community members at-large were indirectly impacted through this project

YEAR 1 GOALS	ACTUAL RESULTS
<b>Goal # 1</b>	
<b>75% and/or at least 188 youth have higher post-test scores</b>	65% (185 youth) displayed higher post-test scores from the 285 total participants
<b>Goal # 2</b>	
<b>At least 188 youth actively participate in at least 75% of project activities</b>	Total of 18 field trips conducted (Each Club offered at least 2 field trips)
<b>Goal # 3</b>	
<b>1,500 Club members, 750 family members, and 500 community members at-large will be indirectly impacted through this project</b>	Over 1,500 Club members, 850 family members, and 600 community members at-large were indirectly impacted through this project

YEAR 2 GOALS	ACTUAL RESULTS
<b>Goal # 1</b>	
75% and/or at least 38 youth will have higher post-test scores	71% (32 youth) displayed higher post-test scores from the 45 total participants
<b>Goal # 2</b>	
Each participating Club will offer at least 2 field trips	Total of 5 field trips conducted  (Each Club offered at least 2 field trips)
<b>Goal # 3</b>	
Over 250 Club members, 150 family members, and 100 community members at-large will be indirectly impacted through this project	Over 320 additional Club members, 135 family members, and 332 community members at-large were indirectly impacted through this project

## Beneficiaries

As mentioned earlier, Club families and community partners played a huge part in the success of the Seed to Sale project. In addition to local farmers and the County Extension Agencies, Clubs partnered with their local Master Gardeners groups for help with tilling and harvesting.

Clubs also benefited from a variety of community based organizations and groups: Abbi's Bakery, People Serving People, local Rotary Clubs, Harman Automotive, local doctors' offices, local Lyons Club, Amish community, Home Depot, Lowes, Perdue, Tractor Supply Company, Farm Credit Union, Green Leaf Nursery, Southern States, and the Kentucky Farm Bureau. These community partners contributed by donating their time, talent, and treasure. In-kind donations of materials and supplies helped offset a portion of the grant funds originally attributed to Clubs. Furthermore, many of the partners listed above donated countless volunteer hours to help Clubs build the garden beds and maintain them throughout the year. All of these partnerships, whether in-kind donors or volunteers, helped teach Club youth about the real impact of being community oriented and the value of being an engaged citizen.

In 2016, the Glasgow Club invited guest speakers from the Sustainable Glasgow to share about the local Farmers' Market. Club youth at Franklin/Simpson built upon their entrepreneurial skills when they chose to sell produce during shift changes at the local factory. Franklin/Simpson also partnered with the local human resources department at Harman Automotive and local Rotary Club to sell produce. Proceeds from all Club food sales went back to support garden programming.

Other interesting beneficiaries of the Seed to Sale project occurred at the Butler County Club. Club members gave back to the community by handing out produce and flowers to the local nursing home and Morgantown Mission. The Glasgow Club handed out locally grown mums to local First Responder locations including 911 Dispatch, local fire stations, Glasgow Police Department, Barren County Sheriff's Department, and National Guard Armory. These activities help build good character and the understanding of giving back to others and are a priority of the Boys & Girls Clubs' mission.



## **Lessons Learned**

KA had the opportunity to learn several lessons from the Seed to Sale project implemented in 2015 and 2016 at 5 Club locations. Several participating Clubs experienced staff turn-over that caused a pause or slow progression in program activities. In 2015, staff turn-over resulted in a few Club sites not reaching their individual objectives. KA realized the impediment of staff turn-over on program quality and ability to meet goals and offered optional conference calls and webinar trainings throughout 2016. In addition, as Clubs filled vacancies to manage the garden they discovered that a higher wage resulted in staff members with more experience, skills and better retention rate. Likewise, hiring staff early and giving them prep time prior to the start of the summer is a way to ensure the late spring and summer garden projects run smoothly and are more successful for staff and youth. KA also learned that creating a flexible program schedule with adaptable lesson plans was critical to the success of the program.

Throughout the year KA encouraged participating Clubs to seek out community partners for their garden program but did not anticipate the level of results the Clubs experienced. These in-kind donations of materials and supplies, as well as volunteer labor, helped offset a large portion of the grant funds originally attributed to Clubs.

KA also found that it was difficult for Clubs to monitor closely the exact amount of produce planted and harvested. In relation to that, Clubs also had a difficult time in monitoring the results of the food they grew (i.e., home with Club members, sold at farmers markets).

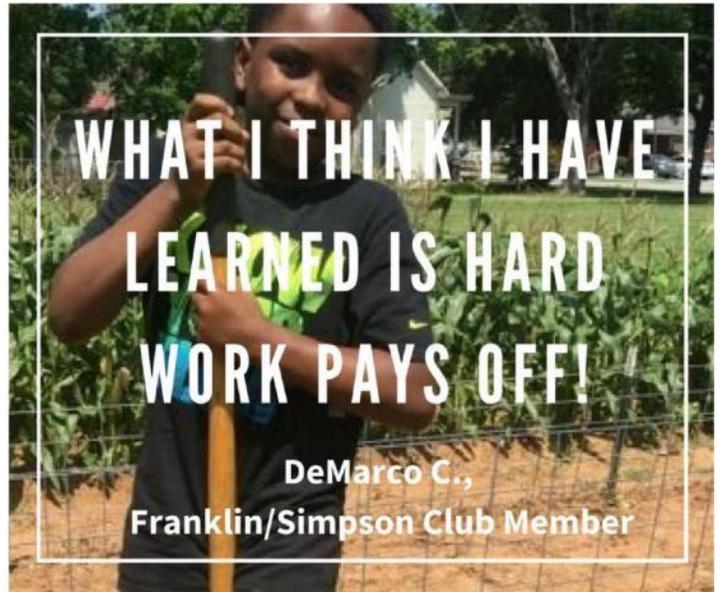
The Glasgow Club learned that the location of their garden was too far from their Club and did not provide enough shaded area for the Club members. When the weather was too hot during the summer Club staff had a difficult time in getting Club members to stay outside for long periods of time to tend to the garden. The Club is exploring the idea of building a trellis as a long-term solution or purchasing a tent as a short-term solution.

Other challenges for the Seed to Sale program included: family relocations, custody issues between parents, attendance with other Club activities occurring at the same time, and Club members signing up late for the program.

## **Conclusion**

Now more than ever teaching kids healthy eating habits is a critical message for the kids we serve at Boys & Girls Clubs. Our Club members very much enjoyed being a part of the Seed to Sale Project these past two years. They provided feedback and ideas to make their experiences even better. This is a positive indicator that the program is providing the youth what they need and that there continues to be interest from them to be part of it.

Below are a few quotes from our Club members:



The Alliance greatly appreciates The Kentucky Department of Agriculture's recognition of the importance of the Seed to Sale project. We enjoyed sharing with you the impact this program has had on the lives of the kids, families and communities we served in 2015 & 2016. As a result of this program, 330 youth, ages 6 – 18, discovered first-hand how to manage a garden, learned where food

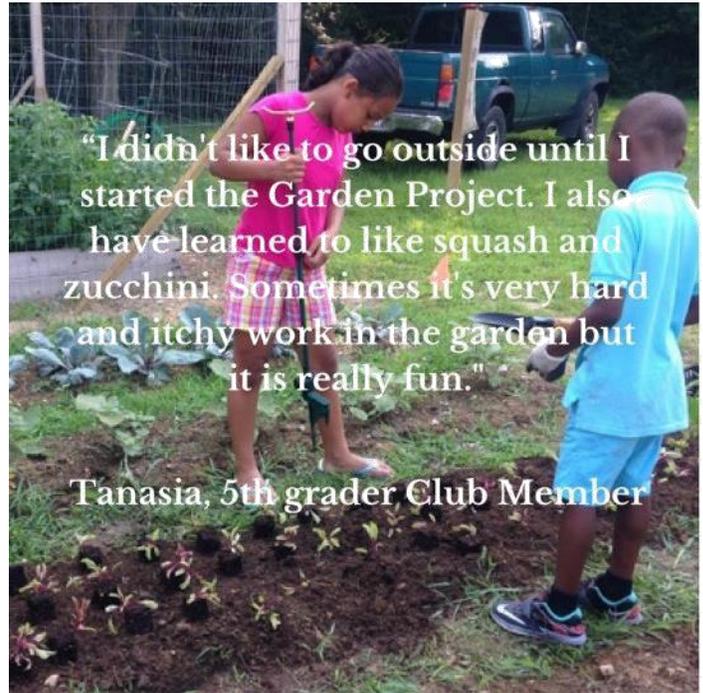
comes from, healthy eating habits, cooking and food sales and marketing. With your help we have inspired the next generation of leaders, future farmers and entrepreneurs in the agricultural industry!

**Contact Person**

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**Additional Information**

<http://kyalliance.org/events-news/club-garden-project.aspx>




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**Plants Planted/Harvested**

- |  |  |                                      |
|--|--|--------------------------------------|
| <input type="checkbox"/> Cabbage         | <input type="checkbox"/> Pansies       | <input type="checkbox"/> Dill Herbs  |
| <input type="checkbox"/> Carrots         | <input type="checkbox"/> Parsley       | <input type="checkbox"/> Cilantro    |
| <input type="checkbox"/> Cherry Tomatoes | <input type="checkbox"/> Peppers       | <input type="checkbox"/> Red Bell    |
| <input type="checkbox"/> Chives          | <input type="checkbox"/> Pumpkins      | <input type="checkbox"/> Peppers     |
| <input type="checkbox"/> Corn            | <input type="checkbox"/> Radish        | <input type="checkbox"/> Bib Lettuce |
| <input type="checkbox"/> Cucumbers       | <input type="checkbox"/> Snap Peas     | <input type="checkbox"/> Okra        |
| <input type="checkbox"/> Eggplant        | <input type="checkbox"/> Strawberries  | <input type="checkbox"/> Gourds      |
| <input type="checkbox"/> Green Beans     | <input type="checkbox"/> Summer Squash | <input type="checkbox"/> Basil       |
| <input type="checkbox"/> Heirloom Beets  | <input type="checkbox"/> Tomatoes      | <input type="checkbox"/> Broccoli    |
| <input type="checkbox"/> Mums            | <input type="checkbox"/> Watermelon    | <input type="checkbox"/> Cauliflower |
| <input type="checkbox"/> Mustard Greens  | <input type="checkbox"/> Zucchini      | <input type="checkbox"/> Cantaloupe  |
| <input type="checkbox"/> Onions          | <input type="checkbox"/> Mums          | <input type="checkbox"/> Peas        |

**Field Trip Destinations**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Kentucky State Fair   | <input type="checkbox"/> Western Kentucky University – Agriculture | <input type="checkbox"/>                |
| <input type="checkbox"/> Local Farmers Markets | <input type="checkbox"/> Department                                | <input type="checkbox"/> Adventure      |
| <input type="checkbox"/> Kenny's Farmhouse     | <input type="checkbox"/> Barton Farms                              | <input type="checkbox"/> Science Center |
| <input type="checkbox"/> Jackson's Orchard     | <input type="checkbox"/> Parky's Farm                              | <input type="checkbox"/> Walnut Grove   |
|  | <input type="checkbox"/> Michael's Garden                          | <input type="checkbox"/> Farm           |



**FRANKLIN/SIMPSON  
BOYS & GIRLS CLUB**



**BOYS & GIRLS CLUB  
OF BUTLER COUNTY**



OSCAR CROSS  
BOYS & GIRLS CLUB



BOYS & GIRLS CLUB OF  
GLASGOW / BARREN COUNTY





**BOYS & GIRLS CLUBS  
OF GREATER CINCINNATI**



## Final Financial Report

	<b>Year 1</b>	<b>Year 2</b>	<b>TOTAL</b>
<b>GRANT FUNDS RECEIVED</b>	\$49,000.00		
<b>GRANT FUND EXPENDED</b>	\$36,806.52	\$8,193.48	\$45,000.00
<b>TOTAL REMAINING</b>	<b>\$8,193.48</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>LINE ITEMS</b>			
<b>SALARIES/ WAGES</b>	\$25,157.52	\$0.00	\$25,157.52
<b>BENEFITS</b>	\$0.00	\$0.00	\$0.00
<b>TRAVEL</b>	\$1,323.66	\$487.62	\$1,811.28
<b>EQUIPMENT</b>	\$0.00	\$0.00	\$0.00
<b>SUPPLIES</b>	\$9,538.09	\$7,553.44	\$17,091.53
<b>CONTRACTUAL</b>	\$0.00	\$0.00	\$0.00
<b>OTHER</b>	\$787.25	\$152.42	\$939.67
<b>Indirect</b>	\$4,000.00	\$0.00	\$4,000.00
<b>TOTAL</b>	<b>\$36,806.52</b>	<b>\$8,193.48</b>	<b>\$49,000.00</b>

## **Project 2: The Kentucky Blueberry Growers Association: Fresh Fruit Handling and New Product Development Project**

### **Project Summary**

*The Kentucky Blueberry Growers Association: Fresh Fruit Handling and New Product Development Project's* initial purpose was and is to help expand market opportunities for Kentucky blueberry farmers for selling Kentucky Proud blueberries into local retail and wholesale markets. The importance of this project was established due to the increase of blueberry production within the state of Kentucky. Much of the production of blueberries is located in rural Kentucky on small family farms that lack the proper certified and permitted facilities to handle and market their blueberries.

The goals of this project were: 1) to expand market opportunities for local blueberries in Kentucky in order to keep up with the projected increase in blueberry production thereby maintaining a premium price for the fruit; 2) to differentiate Kentucky produced blueberries, along with, blueberry value-added products as Kentucky Proud and locally grown; and 3) to create new jobs at the Kentucky Blueberry Growers Association's marketing and warehouse facility in Edmonton, Kentucky.

The goals stated above, were measured by the ability of Kentucky Blueberry Growers Association to expand market opportunities while maintaining a premium price by using a Kentucky Proud marketing strategy. Additionally, this project was evaluated by the number of new jobs that were created as a direct result of the project.

This specific project was built on previously funded Specialty Crop Block Grants (SCBG) in which Kentucky Blueberry Growers Association was awarded. These SCBG were awarded in the years of 2012 and 2013. This project complimented and enhanced the previously completed work by developing further the goals and results of those projects. *The Kentucky Blueberry Growers Association: Fresh Fruit Handling and New Product Development Project* strengthened the SCBG 2012 (*Kentucky Blueberry Growers Association Marketing, Storage and Education Project*) by continuing our direct and wholesale marketing efforts for our Kentucky Proud blueberry farmers. Additionally, this 2014 SCBG reinforced the outcomes of the SCBG 2013 (*The Kentucky Blueberry Growers Safe Handling and Value-Added Processing Project*) through our efforts to advance our value-added products with the knowledge of quality control and safe handling procedures that were implemented.

### **Project Approach**

During the timeframe within the range of this particular grant, Kentucky Blueberry Growers Association, Inc. had acquired new ownership. The new owners were committed to continuing the activities, targets and goals that were outlined in the SCBG 2014 narrative. The new owners were able to obtain through the Kentucky Department of Agriculture the organic certification of our processing warehouse with the scope for organic fresh, frozen and dehydrated blueberries.

Kentucky Blueberry Growers Association, Inc. was able to expand our organic fresh blueberry market by marketing wholesale to Ohio Valley Food Connection and GreenBean Delivery. Our market expanded to reach the locations of: Louisville, KY, Lexington, KY, Cincinnati, OH,

Dayton, OH, Columbus, OH, Nashville, TN, St. Louis, MO and Indianapolis, IN. Through the market outlet of Ohio Valley Food Connection, we were able to market our product to local food stores such as Dorothy Lane Market, as well as 80 different restaurants and businesses.

In addition to the above markets, Kentucky Blueberry Growers Association, Inc. was also able to direct market to Kentucky School Food Programs across the state. The school systems that we have been able to create a relationship with have been: Jefferson County School District, Clarke County School District and Fayette County School District. The Kentucky Blueberry Growers Association, Inc. was able to obtain a higher price this year for both our conventional and organic blueberries, given the calculated costs of processing and packaging. The warehouse was able to have a pay-out rise check sent to our farmers whom supplied KBGA with their blueberries to ensure that the farmer was properly being paid for their healthy commodity.

Kentucky Blueberry Growers Association, Inc. has continued its ability to provide seasonal labor opportunities to those whom live near Edmonton, KY where our centrally located blueberry processing facility is located. We were able to provide 12 seasonal warehouse positions along with 2 delivery positions. Kentucky Blueberry Growers Association, Inc. currently has 1 office manager through the off-season to maintain the office procedures, sales of frozen and dehydrated blueberries and to observe the cooling temperatures of the warehouse freezers.

### **Goals and Outcomes Achieved**

To the goal of expanding market opportunities, Kentucky Blueberry Growers Association, Inc. was awarded the bid on frozen blueberries for the 2017/2018 school year for the Jefferson County School Food Program, which feeds the school districts in, and around, the Louisville, KY region. Kentucky Blueberry Growers Association, Inc. was proud and honored to accept the bid given the large number of lunches that are provided on a daily and weekly basis in Jefferson County School District. It is Kentucky Blueberry Growers Association, Inc.'s pleasure to be able to supply KY Proud frozen blueberries to the school district given the healthy nature of our fruit. Additionally, the bid opportunity allowed for Kentucky Blueberry Growers Association, Inc. to implement the *Kentucky Blueberry Growers Association 2014 Specialty Crop Block Grant: Fresh Fruit Handling and New Product Development Project's* equipment purchases to help streamline our warehouse to improve our local marketing opportunities.

Kentucky Blueberry Growers Association, Inc. was not able to reach our goal of marketing 70,000 pounds of locally produced blueberries in 2015 and 80,000 pounds of blueberries in 2016 because we did not have the estimated value that the previous owners had anticipated. There have been some statements as to why were not able to reach this specific goal notated below in "Lessons Learned". Kentucky Blueberry Growers Association, Inc. also was not able to meet or exceed our goal of maintaining a \$4.00 per pound price to our farmers. With further data calculations, it was not feasible for the warehouse to sustain such a price due to packaging cost increases, labor force cost increases, fuel costs increases and various other miscellaneous costs. The warehouse however, works diligently to try and give the best market price to our Kentucky farmers.

With the purchase of the Excalibur COM1 Dehydrator, Kentucky Blueberry Growers Association, Inc. was able to work towards our development of a dehydrated blueberry product. We were able to continue our work with the University of Kentucky's Food Systems Innovation Center (UK FSIC) to analyze our product in terms of 1) Nutritional Analysis, 2)

Yeast and Mold Analysis, and 3) Shelf-life Stability. We obtained the nutritional analysis (see Nutritional Label below) along with yeast and mold analysis. We were told by the UK FSIC that the results for the shelf-life stability test show an approximate shelf-life of 1 year. We have had positive feedback from folks that have purchased bulk dehydrated berries to order. One feedback has come from the Organic Association of Kentucky and the Sustainable Agriculture & Food Systems Funders whom worked closely on a conference in which they used certified organic dehydrated blueberries in a “snack-pack” for a field day held in Louisville, KY (June 2016). Sarah Fritschner of the Organic Association of Kentucky provided the following feedback: “The blueberry snacks were wonderful. People devoured them. They also had purple fingers afterwards, but it was well worth it!”

Nutrition Facts	
Serving Size 1/4 cup (40g)	
Servings Per Container about 2.5	
Amount Per Serving	
<b>Calories 140</b>	Calories from Fat 0
% Daily Value*	
<b>Total Fat 0g</b>	<b>0%</b>
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
<b>Total Carbohydrate 33g</b>	<b>11%</b>
Dietary Fiber 3g	12%
Sugars 28g	
<b>Protein 1g</b>	
Vitamin A 2%	Vitamin C 30%
Calcium 6%	Iron 8%
*Percent Daily Values are based on a diet of 2,000 calories. Your daily values may be higher or lower depending on your calorie needs.	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram	
Fat 9 • Carbohydrate 4 • Protein 4	

**INGREDIENTS: Blueberries**

Additionally, Kentucky Blueberry Growers Association is continuing our efforts of working towards our added-value product of various fruit leathers. We have successfully created procedure manuals on the process of the fruit leather for continuity of our product and have yet to produce a label and packaging model for this product. We have had various customers and workers taste the product with positive results. Kentucky Blueberry Growers Association, Inc. is working to have approved by the Kentucky Department of Agriculture the ingredient list of the product, for organic use. The process of developing a product successfully, we are finding out, takes time and resources, which at times are limited.

Kentucky Blueberry Growers Association, Inc. was not able to sustain the goal of developing a KY Proud fresh pack blueberry line due to the fact that we altered our plans to purchase a cup sealer. After the transition to the new owners of the warehouse, it was determined that the cup sealer would not be economically feasible to sustain a market with and was too costly in the packaging and labor to create a blueberry cup on a small scale. Additionally, Kentucky Blueberry Growers Association, Inc. was not able to sustain the ability to bring 3 new KY Proud value-added products to the school market due to the fact that the oatmeal bars that were being produced did not market well to the school system. The breakfast bars also did not market well to retail grocery store outlets, and with the failed ability of the public and the school system of being able to sustain the value-added products to their customers, the oatmeal bars were discontinued. There have been some statements as to why were not able to reach this specific goal notated below in “Lessons Learned”. However, as stated before, Kentucky Blueberry Growers Association, Inc. is continuing its efforts towards to the goal of dehydrated blueberries to both the farm to school market as well as to retail grocery outlets.

The Kentucky Blueberry Growers Association, Inc. is proud to be able to offer and maintain a seasonal labor force for the area surrounding Edmonton, KY. Jobs are scarce in rural communities and the association made it a goal to maintain our seasonal labor for a select number of folks. The outcome of being able to provide jobs attests the association's goal of creating and maintaining jobs at the Kentucky Blueberry Growers Association warehouse and office building.

Kentucky Blueberry Growers Association, Inc. was able to meet our goal of creating two new full-time positions and 5 additional seasonal part-time positions at the warehouse over the course of this project and continue to maintain this goal at the warehouse during harvest season. Our two full-time positions are 1) warehouse manager and 2) office manager. The additional seasonal part-time positions at the warehouse are warehouse processing positions.

### **Beneficiaries**

The primary beneficiaries of the *SCBG 2014: The Kentucky Blueberry Growers Association: Fresh Fruit Handling and New Product Development Project* are the Kentucky Blueberry Growers Association members. Through the opportunity of providing our blueberry farmers a distribution point with a processing and handling equipment, we have greatly improved our safe handling, quality control and marketability of their blueberries. Kentucky Blueberry Growers Association's motto is "Cooperation, not Competition", meaning that as a group of farmers, we work together to maintain fair crop prices for our farmers. The Kentucky Blueberry Growers Association, Inc. is a certified KY Proud member and actively uses the KY Proud logo in marketing efforts. Presently, the association has over 200 members since 2002, and in the past couple years, the association has 50 new members within the state of KY.

Additionally, the Kentucky Blueberry Growers Association, Inc. has been successful in creating and maintaining new jobs in the small town of Edmonton, KY. As the quantities of blueberries and the value-added products created increase, the number of new jobs will increase as well. The city of Edmonton, Metcalfe County and the surrounding counties are seeing positive economic benefits from the increased blueberry production in their rural populations. Furthermore, the Kentucky Blueberry Growers Association, Inc. anticipates that in the near future the warehouse facility and specialty equipment may be used to process and package other small specialty fruits and vegetables for members to be marketed as KY Proud products.

The markets that the association has been successful in developing have benefited the wholesale buyers directly. Markets such as the Ohio Valley Food Connection encompass 70 plus markets and restaurants. These buyers under the Ohio Valley Food Connection web benefit from the outcomes and goals achieved through this SCBG. There is direct economic impact associated with this project that affects the outlet through the Ohio Valley Food Connection. There was \$18,460.31 of gross sales to Ohio Valley Food Connection. From the direct gross sales, the Ohio Valley Food Connection was able to obtain \$3,815.57 in market fees. The data of the economic impact and generation of funds through the retail sales of the blueberries has not been tracked and would require additional research and further analysis.

### **Lessoned Learned**

As previously reported, Kentucky Blueberry Growers Association withdrew our plans to pursue the Cup Sealer CTS – 528 EX machinery due to the fact that the new owners of the association had a different outlook on the new product development of blueberries sealed within single-serving cups. The quest to have blueberries sealed in small serving cups was not

economically feasible in the long-run and the association currently did not have a market for such a product. It was not in the interest of the Kentucky Blueberry Growers Association, Inc. to develop a new product, such as sealed cup servings, without proper data analysis to support a direct market. With the refunded monies, Kentucky Blueberry Growers Association, Inc. was able to purchase another floor scale and have the new scale properly calibrated. A new commercial NTEP floor scale was needed to replace the previous scale which was damaged during a lightning storm in the spring of 2017. The extra funds were also allocated for a replacement food-grade conveyor belt for one of our sorting conveyors within the warehouse. Lastly, the refunded cup sealer funds were apportioned towards packaging and material costs associated with our Kentucky Blueberry Growers Association KY Proud packaging.

The previously developed added-value products in January 2015 of Blueberry Oatmeal Bars for the retail market, branded as Bluegrass Fresh Oatmeal bars, have since been discontinued. As previously stated in the annual performance reports (12/01/2015 and 11/15/16), the product was not selling effectively, despite its healthiness and uniqueness. Kentucky Blueberry Growers Association, Inc. is continuing to work towards our goal of added-value products being developed for the consumer market.

As previously stated in our narrative and past annual performance reports, Kentucky Blueberry Growers Association, Inc. has 45 farmers whom have requested and been given registered farm numbers to adhere to our traceability and food recall system HAACP (Hazard Analysis and Critical Control Points) procedures. The association anticipated several thousand more pounds of blueberries to be brought into the warehouse this year; however, we were only able to obtain approx. 3,000 more LBS than last year's mark of 17,464 LBS. One variable that that can be concluded is that the association observed some of our members taking a slight step backward given the new ownership. Under the new ownership, we have implemented a contractual agreement between farmer and the association as it is standard practice across the food processing sector. Kentucky Blueberry Growers Association, Inc. made certain guidelines for food-safety reasons which require a farmer whom is selling their fruit to our processing warehouse to adhere to. Several of those requirements are: farm liability insurance, GAP training certificates, fresh-market quality terms, the association's availability to farmer's input-records on farm and testing for pest related issues with the blueberries upon intake at the warehouse. As previous reports have outlined, some farmers have decided to market their fruit independently. For the above reasons, we may have fallen short of our initial goals of blueberry weight brought into Kentucky Blueberry Growers Association, Inc.

Given the scope of quantitative numbers of blueberry plants sold to customers outlined in the *2014 SCBG 2014: Kentucky Blueberry Growers Association: Fresh Fruit Handling and New Product Development Project*, the warehouse still has yet to see the number in weight from 82 new acres of blueberries. Blueberries take 5-7 years to mature and produce good harvest potential numbers of 10-15 LBS per bush. As mentioned before in KBGA's performance report (12/02/2015 and 11/15/16) Kentucky blueberry farmers are finding that they are battling phytophthora (a.k.a. root rot) in their fields. We have documented cases of farmers whom have pulled blueberry bushes from their fields, have brought that bush into their local UK Extension Office for testing, and have come back positive for phytophthora. There have been several nurseries that have been documented with phytophthora and therefore have to cease their sales of bushes. As noted in the previous performance report (12/01/2015), there have been blueberry trainings offered through the University of Kentucky Extension offices to outline techniques in avoiding such diseases and products to effectively treat this ailment.

However, with the slight setback of harvested blueberries making their way into the warehouse for processing, it does not mean that the equipment purchased from this grant is going unused. Kentucky Blueberry Growers Association, Inc. has seen some larger-scale farmers utilize the association's warehouse and marketing. The floor scale and printer, as stated in the previous performance report (12/01/2015), have been important in documenting and keeping accurate records for farmers and the warehouse. These pieces of equipment are essential for our warehouse needs as they are keeping a standard of professionalism with the processing procedures. Additionally, Kentucky Blueberry Growers Association, Inc. is unable to accurately quantify where farmers may be selling their blueberries. For instance, smaller-scale farmers may be selling direct to the public at local farmers markets, on-site at their farm, or allowing U-pick. Greater statistical analysis is needed, which we do not have time or the resources to complete at this time.

The initial targets of 70,000LBS of blueberries to be seen across the association's conveyor belts set forth in the original narrative provided at the onset of this grant have still yet to be seen. It could be concluded that the previous owners may have been too liberal in their calculations of the amount of blueberries to be harvested in the state and not factoring in the element that farmers are not growing exclusively for Kentucky Blueberry Growers Association, Inc. Again, factors such as disease, weather and plant maturity have been prominent in the ability to reach the expected goal of 70,000 LBS of blueberries brought to our warehouse. One variable for plant maturity could be the fact that farmers whom have purchased plants in the past from the previous owners of the warehouse and Bluegrass Nursery planted their purchased nursery stock to soon. A blueberry bush will grow almost twice as fast in a pot, than in the ground. You are able to control the soil factors more easily and to feed that bush the proper nutrients for it to grow into a mature producing bush. Farmers may have been planting their stock straight from a 1 gallon pot to their field when they should have transplanted that same bush into a 3 gallon pot, and then the following year into a 5 gallon pot. These factors which Kentucky Blueberry Growers Association, Inc. believes, is that this should hold merit on the possible shortfall of harvested blueberries coming into the warehouse. Additionally, the association has not factored in the distances that some farmers need to travel in order to bring in their harvested fruit in a timely manner keeping quality standards of the fruit. For instance, blueberries in KY are harvested typically the end of May through mid-July. With this in mind, Kentucky can be very warm during these summer months which hinder the harvesting of the blueberries and the time in which you may harvest. If blueberries are harvested in the heat of the day, they may become soft and mushy, which lowers the quality of the berry. Farmers must bring in their harvested fruit within a 24 hour period of being harvested or they sacrifice the quality of their fruit, therefore, the fruit may not be accepted at the warehouse doors, given association's new member agreement requirements on quality control. For some farmers, it just is not physically or economically feasible to travel on a daily basis to the warehouse to deliver fruit. Some of the bushes that were previously stated as sold could be to farmers that are several hours from the warehouse, making it virtually impossible to properly deliver quality fruit.

## **Conclusion**

In conclusion, it has been Kentucky Blueberry Growers Association, Inc.'s pleasure to carry out the goals and expected outcomes of the 2014 Specialty Block Grant which was received. The association will continue its efforts to promote KY Proud blueberries in the state, to support Kentucky Blueberry farmers with marketability of their fruit and to enhance education surrounding the agriculture of blueberry production.

Kentucky Blueberry Growers Association, Inc. would like to thank all the supporting members of the association, labor force and contractual services that are rendered at the warehouse. We would also like to thank all the dedicated employees and staff of the Kentucky Department of Agriculture for their continued efforts and supporting nature through the programs, education and grant opportunities that they provide for the agricultural community within the state of Kentucky.

### **Contact Person**

- Travis Byrne
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### **Additional Information**

- [www.KYBG.org](http://www.KYBG.org)
- See photos at end of report (#10).

**Final Financial Report**

<b>GRANT FUNDS RECEIVED</b>	<b>\$ 42,573.00</b>
<b>GRANT FUND EXPENDED</b>	<b>\$42,573.00</b>
<b>TOTAL REMAINING</b>	<b>\$ 0.00</b>
<b>LINE ITEMS</b>	
<b>SALARIES/WAGES</b>	<b>\$ 0.00</b>
<b>BENEFITS</b>	<b>\$ 0.00</b>
<b>TRAVEL</b>	<b>\$ 0.00</b>
<b>EQUIPMENT</b>	<b>\$ 36,462.72</b>
<b>SUPPLIES</b>	<b>\$ 3,478.62</b>
<b>CONTRACTUAL</b>	<b>\$ 260.00</b>
<b>OTHER</b>	<b>\$ 2,371.66</b>
<b>TOTAL</b>	<b>\$ 42,573.00</b>

<b>SCBG 2014</b>		<b>\$42,573.00</b>	
		<b>Date Purchased</b>	
<b>Other</b>	<b>Amount</b>		<b>Vendor</b>
<b>Indirect Costs "Facility &amp; Admin Costs"</b>	<b>\$2,371.66</b>	<b>Varies</b>	<b>Indirect Costs "Facility &amp; Admin Costs"</b>
<b>TOTAL</b>	<b>\$2,371.66</b>		

<b>SCBG 2014</b>		<b>\$42,573.00</b>	
		<b>Date Purchased</b>	
<b>Supplies</b>	<b>Amount</b>		<b>Vendor</b>
<b>KBGA KY Proud Packaging Material</b>	<b>\$3,478.62</b>	<b>05/23/2017</b>	<b>Express One Source</b>
<b>TOTAL</b>	<b>\$3,478.62</b>		

<b>SCBG 2014</b>		<b>\$42,573.00</b>	
		<b>Date Purchased</b>	
<b>Contractual</b>	<b>Amount</b>		<b>Vendor</b>
<b>Floor Scale Calibration</b>	<b>\$260.00</b>	<b>06/09/2017</b>	<b>System Scale Corporation</b>
<b>TOTAL</b>	<b>\$260.00</b>		

<b>SCBG 2014</b>		<b>\$42,573.00</b>	
<b>Equipment</b>	<b>Amount</b>	<b>Date Purchased</b>	<b>Vendor</b>
<b>Floor Scale and Printer</b>	<b>\$3,663.00</b>	<b>4/6/2015</b>	<b>Triner Scale</b>
<b>Excalibur Dehydrator</b>	<b>\$7,184.00</b>	<b>4/8/2015</b>	<b>Excalibur</b>
<b>Kitchen Equipment</b>	<b>\$2,139.00</b>	<b>4/8/2015</b>	<b>Mac's</b>
<b>Cup Sealer – Commercial ***</b>	<b>\$7,316.00</b>	<b>4/8/2015</b>	<b>Teinnovations</b>
<b>Cup Sealer - Tabletop</b>	<b>\$1,300.00</b>	<b>4/6/2015</b>	<b>Wilpack Packaging</b>
<b>Clamshell Filler</b>	<b>\$4,000.00</b>	<b>2/25/2015</b>	<b>Lakewood</b>
<b>Rotary Pack Off Table</b>	<b>\$2,580.00</b>	<b>2/25/2015</b>	<b>Lakewood</b>
<b>Box Filler</b>	<b>\$10,500.00</b>	<b>2/25/2015</b>	<b>Lakewood</b>
<b>Casters</b>	<b>\$360.00</b>	<b>2/25/2015</b>	<b>Lakewood</b>
<b>Lakewood Shipping</b>	<b>\$637.20</b>	<b>2/25/2015</b>	<b>Lakewood</b>
<b>Additional Lakewood Shipping</b>	<b>\$562.80</b>	<b>4/3/2015</b>	<b>Lakewood</b>
<b>Vacuum Sealer</b>	<b>\$2,330.94</b>	<b>3/13/2015</b>	<b>Pleasant Hill Grain</b>
<b>Cup Sealer REFUND</b>	<b>-\$7,316.00</b>	<b>11/11/2016</b>	<b>Teinnovations</b>
<b>Conveyor Belt Replacement</b>	<b>\$436.78</b>	<b>04/17/2017</b>	<b>Bullit Belting &amp; Supply</b>
<b>Floor Scale Replacement</b>	<b>\$769.00</b>	<b>05/30/2017</b>	<b>Floor Scales Online</b>
<b>TOTAL</b>	<b>\$36,462.72</b>		

1. **Photos: Kitchen & Warehouse**



## **Project 3: Green Industry Education & Marketing Opportunity for Kentucky Growers**

### **Purpose**

The active membership of the Kentucky Nursery & Landscape Association is comprised of growers, garden center operators and landscapers in the state of Kentucky. The first purpose of this project was to secure funding in order to offer industry education through an education conference to our members. The education conference's purpose is to increase the knowledge of our growers, retail operators, landscapers, and others involved in the green industry in Kentucky from topics such as nursery and greenhouse production, business management, disease & pest management, garden center/landscape maintenance, landscape installation and design, sustainability in the green industry, business management, and personnel training.

Our second purpose was to create a marketing opportunity for our growers through production of a brochure with a map of Kentucky which lists the nurseries in our state and specifically where each grower is located, along with their contact information. We would also include in the brochure our website which contains KNLA's new directory where potential buyers could visit the website to gather more information about each grower and list the Kentucky Department of Agriculture's website page of the Plant Availability Guide for potential buyers to source plant material. These brochures were distributed via website, mail, trade shows, events and other markets

This project is important and timely because all segments of our industry were hit hard by the country's economic down turn and expanding the market place, both in and out of state, to additional potential customers during the slow recovery is a way to assist in keeping firms solvent. By creating this marketing brochure, there would be an avenue for potential sales to our Kentucky growers, the potential impact of additional sales could mean the difference between some small businesses staying in or going out of business.

Industry education is also timely because in our industry practices, procedures, technology, diseases and pests are changing rapidly. Through the education conference our members would stay abreast of these issues and implement them in their own businesses. The education program also addresses sustainability. This includes not only plant selections which will influence home owners benefits and maintenance costs but also production practices and marketing which will reduce input costs and maximize sales.

This project was not submitted to or funded by another Federal or State grant programs. Funding efforts were made through attendee registration, private sponsorship and in-kind services from our co-sponsors.

### **Project Approach, Goals and Outcomes Achieved:**

Five meetings per year in the years 2015 & 2016 of Educational Committee lead by Dr. Robert McNiel. Committee members included University of Kentucky Professors, UK Extension Representatives and Arborist/Botanical Garden Directors. Meetings were held via conference calls and in person. Purpose of meetings were to plan and coordinate education for the 2015 and 2016 KNLA Spring Training Educational Workshops and Seminars and the Summer Retreat Workshops and Seminars. Results were 34 presenters in 2015 and 26 presenters in 2016.

Four meetings per year in the years 2015 & 2016 of Kentucky Nursery & Landscape Board of Directors, Educational Advisors and Executive Committee lead by Martin Korfhage (2015) and Kim Fritz (2016), Past and Current Presidents of KNLA. Board members and Educational Advisors included University of Kentucky Professors, an Arboretum Director, several Nursery, Landscape and Garden Center Owners and Managers. Meetings were held in person. Purpose of meetings were to plan and coordinate education for the 2015 and 2016 KNLA Spring Training Educational Workshops and Seminars and the Summer Retreat Workshops and Seminars. Successful show/education seminars in all three years.

One distinct, quantifiable and measurable outcome that directly and meaningfully supports the project's purpose is the number of attendees that register for the education conference. There was attendance of 250 in 2015 and 165 in 2016 for Spring Training. For the Summer Retreat there were 80 attendees in 2015 and 120 in 2016. The attendees were overwhelmingly positive when surveyed. In 2015 and 2016, the KNLA Board of Directors made the decision to continue both Spring Training and the Summer Retreat educational seminars and trade show, but the number of days to attend was reduced from 3 to 2 for Spring Training and from 2 to 1 day for the Summer Retreat. This was determined by overall total cost/benefit analysis as the costs were reduced from \$70,000 per year in 2014 and 2015 to less than \$40,000 in 2016.

In addition to the above, there were many meetings with vendors, educators/presenters, designers, Nursery owners, general membership and end users.

### **Impact/Beneficiaries**

The specialty crop beneficiaries of the project were primarily Kentucky growers. Other beneficiaries were Kentucky retail garden center operators, landscapers, academic professionals, students, and government/municipal professionals in the green industry. A potential of 1,000+ individuals have the potential to be impacted.

The growers were impacted by obtaining new business contacts through the distribution of the marketing brochure through sales of their specialty crops. The growers (and other green industry professionals) were impacted through the education conference immediately by practicing what they have learned and implement new strategies, procedures, technologies into their place of business.

### **Lessons Learned:**

Our industry has changed drastically since the 2008 Great Recession. Most Kentucky Nursery Growers were able to hang on through the Recession only to be broke and in massive debt at the end of the Recession. When applying for the Grant, there were 350 active registered Nurseries, Garden Centers, Arborist and Landscapers Growers in Kentucky. By late 2016 there were 300 remaining. This stresses the fact that education and networking is essential in maintaining and growing nursery related products and services.

Education is always essential in moving an industry forward. Kentucky nurseries, garden centers, arborists, architects and landscapers are no exception and this Grant has met its objective of providing affordable education for our constituents. One thing we have learned through this project is how important it is to "think outside of the box" in how we approach education. We have to provide information in a fun and interactive way, provide more hands-on learning, communicate more often and in numerous ways (email, Facebook, Instagram, Twitter, Snapchat and all the others) in addition to traditional classroom. In 2016, KNLA

started an "Industry Dirt" blog that has been successful and have enhanced our website to include many links to educational alternatives. The most successful learning though continues to be through our Educational Conference. Some things can remain the same, but still be enhanced and the Grant objective was met through the Spring Training and Summer Retreat Educational Conference.

**Contact Person:**

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**Additional Information:**

At the time the Grant was awarded, Betsie Taylor was the Executive Director and was responsible for the administration of this Grant. Betsie Taylor is no longer with KNLA. Kim Fritz is the new contact.

**Final Financial Report:**

<b>GRANT FUNDS RECEIVED</b>	<b>\$15,000.00</b>
<b>GRANT FUND EXPENDED</b>	<b>\$15,000.00</b>
<b>TOTAL REMAINING</b>	<b>\$0</b>
<b>LINE ITEMS</b>	
<b>SALARIES/ WAGES</b>	\$
<b>BENEFITS</b>	\$
<b>TRAVEL</b>	\$2,556.83
<b>EQUIPMENT</b>	\$
<b>SUPPLIES</b>	\$
<b>CONTRACTUAL – SPRING TRAINING CONFERENCE SPEAKER HONORARIUMS</b>	\$2,550.00
<b>CONTRACTUAL – SPRING TRAINING CONFERENCE PRINTING AND REPRODUCTION</b>	\$4,257.44
<b>OTHER – SUMMER RETREAT &amp; SHOWPLACE – SPEAKER HONORARIUMS</b>	\$2,500.00
<b>OTHER – SUMMER RETREAT &amp; SHOWPLACE – PRINTING &amp; REPRODUCTION</b>	\$3,135.73
<b>TOTAL</b>	<b>\$15,000.00</b>
<b>GRANT FUNDS RECEIVED</b>	<b>\$15,000.00</b>
<b>GRANT FUND EXPENDED</b>	<b>\$15,000.00</b>
<b>TOTAL REMAINING</b>	<b>\$0</b>

## **Project 4: New Roots: Winter Fresh Stop Project**

### **Project Summary**

Many children in Louisville do not have access to healthy fruits and vegetables. In addition, people living in neighborhoods in West Louisville live an average of ten years less than their counterparts in more affluent neighborhoods in the east end of Louisville. These social determinants of health are also unfortunately present in Kentucky's rural neighborhoods. At the same time, Kentucky farmers are looking for secure markets for sustainably raised produce. It is time for an innovative model to connect these families to farmers so everyone can come together to thrive.

New Roots believes that fresh food is a human right. We recruit, develop, and inspire communities with limited resources struggling with food insecurity to lead Fresh Stop Markets so beautiful, farm-fresh produce reaches the people who need it most, with the greatest joy. Markets utilize cooperative economics and a sliding scale so everyone in our community can access a "share" of in-season produce, bi-weekly at community spaces in underinvested neighborhoods. Because the produce is forecasted and the community's funds are collected ahead of time, farmers have secure markets and grow without risk.

### **Project Approach**

New Roots partnered with Sun Valley Community Center and Baptist Health to organize our first Winter Fresh Stop in the Valley Station Neighborhood, and extend the season for the Shawnee Neighborhood Fresh Stop. We also created a new winter market at the Jewish Community Center in the Hikes Point Neighborhood of Louisville, which grew into a seasonal market after the grant period was over (now into its third year). New Roots staff organized community members struggling with food insecurity faced with limited resources to create, lead, and implement these Fresh Stop Markets. New Roots also organized Kentucky farmers to extend their growing season and provide the produce for the Fresh Stops.

### **Goals and Outcomes Achieved**

A significant result of the Winter Fresh Stop Project was to gain confidence in both our community leaders and farmers to go beyond the typical Kentucky growing season. We stretched the end of the season by two months, which equated to the most food insecure families in our City being able to eat fruits and vegetables longer. It also prompted us to organize in a new neighborhood beyond Shawnee to Valley Station and Hikes Point and mobilize families with limited resources to step into leadership roles in food system work. We were able to provide a secure market for Kentucky farmers for their winter crops, all of which would have gone to waste if not for New Roots and this grant. Adam Barr from Barr Farms has told us that planting large amounts of a particular vegetables for the Fresh Stop Markets has then spread the risk for him to grow more for his farmers' markets, thus insuring higher sales. Root Bound Farms told us recently that they could not have made a living this season if not for Fresh Stop Markets.

Our partners in the Project included:

Sun Valley Community Center (Louisville Metro Parks Department) and the new Sun Valley Winter Fresh Stop Market. This is a partner we had not identified previously. They provided in-kind space and leadership. Now, we see community centers as a very viable partner moving forward into other communities with Fresh Stop Markets.

Shawnee Fresh Stop Market: This Market became our second Winter Fresh Stop Market site, providing in-kind space and leadership.

Gendler Grapevine Fresh Stop Market @ the J: This Market became our third Winter Fresh Stop Market site, providing in-kind space and leadership. This was our first partnership with a private community center and our first Market in the East End of Louisville.

Barbour Farms and the Consortium. They were unable to provide what was promised to the Fresh Stop Markets so did not participate.

Ashbourne, Root Bound, Valley Spirit Farm, Pavel Ovechkin at Fox Hollow and Barr Farms. These farms all stepped up to stretch their growing season beyond October (the typical ending) for the Fresh Stop Markets and earned significant resources in doing so. Trust and relationships were strengthened.

### ***Activities completed:***

Community organizing strategy to recruit, develop and inspire new community volunteer leaders to run the Winter Fresh Stop Markets

Recruited new farmer partners to supply the Fresh Stop Markets

Recruited a new space (community center) to provide in-kind donation of space to host the Market.

The progress that was made towards our outcomes include recruiting 300 total families to the Winter Fresh Stop Markets, which increased our shareholder totals from 1000 families to 1300, with 5600 lbs. of produce consumed. This equates to a farm impact of \$5,000 just for the Winter Fresh Stops. Total farm impact for the entire grant period was \$100,000.

We were able to purchase equipment for the longer-term goal of making it easier for farmers to organize fresh produce for distribution to the Markets as well as value-added processing.

### ***Goals***

Goal: Value-added processing

Actual: Purchased some equipment but were not successful in implementing value-added processing

Goal: To increase access to nutritious fruits and vegetables year-round.

Actual: Increased access for 300 additional families due to the Winter Fresh Stop Markets

## **Objectives**

Objective: Facilitate increased knowledge and consumption of Kentucky specialty crops by families in Louisville's underinvested neighborhoods through direct marketing and leadership development

Actual: We developed a total of twenty new leaders from Valley Station and Shawnee.

Objective: Identify and implement a value-added processing facility in south central Kentucky for specialty crops.

Actual: Purchased some equipment but were not successful in implementing value-added processing

## **Measurable Outcomes**

Outcome prediction: 50% overall increase in farm earnings by the end of year two.

Actual: Sales in Year 1 from Winter Fresh Stop Markets went from \$0 to \$5000. Total farm impact for the 2015 growing season went from \$50,000 to \$100,000.

Outcome prediction: To coordinate Winter Fresh Stops at two neighborhood sites facilitating a total of 5 monthly Winter Fresh Stops in December through March of year one and 10 (2x/month) Winter Fresh Stops in year two.

Actual: Coordinated at three new neighborhood sites for a total of five winter Fresh Stop Markets at each location from October through December.

Outcome prediction: To serve full capacity (140 families) at both Fresh Stop sites (280 families total) by the end of year two.

Actual: Served 300 families at three sites by the end of the grant period.

## **Beneficiaries**

300 families (75 percent identifying as low-income, food insecure) benefitted from increased consumption of farm-fresh produce at the Winter Fresh Stop Markets.

Five farms (Root Bound, Valley Spirit, Ashbourne, Pavel at Fox Hollow, and Barr Farms) benefitted from supplying produce to the Winter Fresh Stop Markets.

## **Quantitative Data**

The quantitative data that concerns the farmer beneficiaries is \$5000 (winter) \$100,000 (total season) total farm impact as measured by produce procurement spreadsheets.

The quantitative data that concerns the shareholder beneficiaries is 300 families (winter) 1200 families (total season) purchased 15 lbs. of local produce every other week from June through December.

## **Lessons Learned**

This project provided great learning experiences for New Roots and an opportunity for growth. We learned that not all families struggling with fresh food insecurity live in West Louisville, and that for many families living in the more affluent East End, proximity to a grocery store does not equate to more produce consumed (especially not local produce). We also created very strong bonds with our farmers, including a yearly winter forecasting event, where community leaders meet with farmers to forecast every vegetable for the coming year, negotiate pricing, and make a firm commitment, guaranteeing a market to each farmer in our partnership. This way, the community gets what they like to eat, and the farmers are guaranteed a market.

We also learned, unfortunately, that we cannot feed the entire New Roots shareholder base (~2000 families) with local food all year round. While we were able to stretch the growing season to include May through December, our farmers are unwilling and unable to grow past December in the amounts needed to feed our ever-growing shareholder base. In addition, our leaders are not willing to set up markets for the entire year. There does not seem to be enough interest in processing value-added food for winter supply among our shareholder base.

**Contact Person**

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**Additional Information**

[www.newroots.org](http://www.newroots.org)  
[@NewRootsKy](https://www.facebook.com/newroots)  
 #freshstopmarkets

**Final Financial Report**

<b>GRANT FUNDS RECEIVED</b>	<b>\$ 15,270.00</b>
<b>GRANT FUND EXPENDED</b>	<b>\$ 15,270.00</b>
<b>TOTAL REMAINING</b>	<b>\$ 0</b>
<b>LINE ITEMS</b>	
<b>SALARIES/ WAGES</b>	\$
<b>BENEFITS</b>	\$
<b>TRAVEL</b>	\$
<b>EQUIPMENT</b>	\$
<b>SUPPLIES</b>	\$ 13,043.04
<b>CONTRACTUAL</b>	\$
<b>OTHER (MARKETING MATERIALS)</b>	\$ 2232.09
<b>TOTAL</b>	<b>15275.13</b>

Breakdown of Supplies purchased:

Supply: Commercial Vacuum Sealer  
Date: 3/3/15  
Dollar Amount: \$2,000  
Vendor: Scott Curle

Supply: (2) Cooker/Canners  
Date: 3/9/15  
Dollar Amount: \$768.12  
Vendor: Hayneedle

Supply: Cooler  
Date: 3/9/15  
Dollar Amount: \$1,210  
Vendor: EBay

Supply: Dehydrator  
Date: 3/10/15  
Dollar Amount: \$580.99  
Vendor: Hayneedle

Supply: Ice Machine  
Date: 3/19/15  
Dollar Amount: \$3,488.93  
Vendor: JesRestaurant Equipment

Supply: Produce Sorter  
Date: 4/7/15  
Dollar Amount: \$4,995.00  
Vendor: Hoover's Supply

Supply: Marketing Materials  
Date: April through December/2015  
Dollar Amount: \$870  
Vendor: Bob's VIP Printing, LLC

Supply: Marketing Materials  
Date: January through December/ 2016  
Dollar Amount: 600.60  
Vendor: Bob's VIP Printing/502 Print and Copy

Supply: Marketing Materials  
Date: April through August/ 2017  
Dollar Amount: 761.49  
Vendor: Bob's VIP Printing/502 Print and Copy

Total: \$15275.13

## **Project 5: Improving the Market Potential and Environmental Impact of Apples Grown in Kentucky by Defining the Potential for Production of High Quality Hard Cider and Sparkling Wine**

**Project Summary:** The proposed project is designed to increase the sustainability of farms in Kentucky through diversifying existing operations, creating markets for new products, and developing methods to produce these products, specifically sparkling wine, cider, and hard cider. Apples produced in Kentucky are primarily grown as dessert style - eating apples. Due to customer expectations there are extremely high standards for their appearance, which ultimately requires very high labor costs and pesticide inputs to achieve such quality appearance and taste. The high cost associated with producing such apples combined with the relatively low prices received for sales of apples in the wholesale market, force many Kentucky farmers to limit their production to retail sales where they often require considerably higher prices needed to justify the high cost of production. Although the rate of return is higher when apples are sold directly to the consumer at on-farm markets or local fresh market, profits are limited by the population size of the area in which the fruit is grown. In addition to the high inputs required to produce dessert style - eating apples, there is considerable effort required to sell the fruit once it has been harvested. Apples grown for cider production can be considered acceptable regardless of cosmetic blemishes and therefore require lower chemical and labor inputs to be successfully produced by Kentucky farmers, thus improving the environmental and economic impact of apple production. Processing apples into hard cider substantially extends both marketability and product shelf life.

When apples are processed into hard cider both the value and marketability of the product is dramatically improved. Growth of hard cider sales in the US is expanding more rapidly than any other alcoholic beverage. The motivation for this project was to help diversify the products sold by the rapidly expanding commercial wineries and breweries of Kentucky including: approximately 70 commercial wineries, 22 commercial breweries, commercial apple growers, as well as both sweet and hard cider producers. According to Bart Watson, Brewers Association of America Staff Economist, Kentucky breweries alone have a total economic impact of \$271 million to the state, with 1,600 Kentucky residents directly employed by craft breweries and nearly 1,000 more people are indirectly employed by the industry. Information gained from this project will have a direct impact on improving the profitability and market potential of apples grown in Kentucky as well as helping to diversify the products sold by the rapidly expanding commercial wineries and breweries of Kentucky.

### **Project Approach:**

There were three primary goals for this project:

- 1) Identify basic fruit chemistry parameters of apple cultivars currently grown commercially in Kentucky. 47 different apples were sampled from the University of Kentucky and Morehead State Orchards as well as Reed Valley Orchard in 2015 and 2016. The measurement of sugar accumulation, Titratable Acidity and juice pH was determined for 47 different cultivars. This data that was made available to apple growers, commercial breweries and wineries interested in producing hard cider. In general sugar accumulation was relatively consistent between cultivars (average = 13.2% soluble solids). However juice pH and Titratable acidity were variable between cultivars. This

information will provide an estimation of the potential strength of acidity that will be provided by each cultivar tested. Information related to expected juice composition for a variety of cultivars grown in Kentucky will be a powerful resource for hard cider producers when sourcing apples to produce high quality hard cider.

- 2) Determine appropriate production practices to maximize the quality of sparkling wine and cider produced from Kentucky grown apples and grapes. Controlled fermentation and processing techniques were used to determine their effects on development and persistence of aroma and flavor characteristics of ten of the most promising apple cultivars from field experiments. All ten apple cultivars produced commercially acceptable cider, however all but one lacked astringency typically found in high quality ciders. Of all cultivars sampled Redfield expressed the highest astringency, but the fruit was often too soft to process using industry standard methods. Therefore, a novel method was developed to press whole frozen apples. The freezing process allowed for full extraction of juice with highly concentrated flavor. Future experiments will expand upon this work. Structured samplings of sparkling wine and cider produced from these experiments were made available to commercial winemakers and brew masters for feedback and quality assessment including a detailed description of aromas identified in each sample. This information will be helpful when determining an appropriate cider style for each available apple cultivar.
- 3) An experimental apple planting was established at the UK Horticulture Research Farm using apple cultivars not currently commercially planted in Kentucky that have been specifically bred to produce high quality cider. Cultivars were chosen based on field observations of disease resistance, harvest date and fruit composition. When choosing apple cultivars to plant preference was given to apple cultivars that expressed a late harvest date, desirable aroma, average to above average astringency, and disease resistance. Eleven of the most promising apple cultivars were grafted to a dwarfing rootstock and planted to a high-density orchard training system in the spring of 2016. This orchard will continue to serve as a foundation for further research and development of cider apple cultivars most suitable for successful production of high quality cider production in Kentucky.

### **Goals and Outcomes Achieved:**

All three primary goals were achieved by the end of this project, with examples of data collected from this project is presented below.

Quantitative measures of impact of this project were addressed via pre and post presentation survey given to attendees of “Hard Cider Production Methods” at the 2017 UK Fruit and Vegetable conference. Included in the presentation was a tasting of ciders produced during this study with comparison of different apple cultivars and various methods of introducing carbon dioxide to hard cider.

There were 46 attendees of this presentation and 29 of 46 attendees completed a pre and post presentation survey.

GOAL #1: Identify basic fruit chemistry parameters of apple cultivars currently grown commercially in Kentucky.

Fruit chemistry analysis of apple cultivars grown in Kentucky during the 2015 and 2016 growing seasons was presented during "Hard Cider Production Methods".

PERFORMANCE MEASURE: Change in understanding as measured by pre- and post-project surveys.

BENCHMARK: The Benchmark (or baseline) will be established through the pre-presentation survey.

TARGET: We anticipate that 75 percent of the 80 participants will indicate that their understanding increased and that they intend to implement some of the strategies/practices they learned at the presentations.

29 of 29 participants said that their understanding of cider production increased.

25 of 29 participants said they intend to implement some of the strategies/practices they learned at the presentations.

16 of 29 participants said they plan to add sparkling wine or hard cider to their current production efforts.

GOAL #2: Demonstrate the effects of specific production practices on quality attributes of sparkling wine and cider produced from Kentucky grown apples and grapes to commercial winemakers and brew masters working in the State of Kentucky.

Demonstration of sparkling cider production methods occurred during "Hard Cider Production Methods" and included tasting of ciders produced during this study with comparison of different apple cultivars and various methods of introducing carbon dioxide to hard cider.

PERFORMANCE MEASURE: Change in understanding as measured by pre- and post-project surveys.

BENCHMARK: The Benchmark (or baseline) will be established through the pre-presentation survey.

TARGET: We anticipate that 75 percent of the 80 participants will indicate that their understanding increased and that they intend to implement some of the strategies/practices they learned at the presentations.

29 of 29 participants said that their understanding of cider production increased.

16 of 29 participants said they intend to implement some of the strategies/practices they learned at the presentations.

GOAL #3: Demonstrate the potential for establishment of high-density apple orchard using apple cultivars specifically bred to produce high quality cider.

PERFORMANCE MEASURE: Change in understanding as measured by pre- and post-project surveys.

BENCHMARK: The Benchmark (or baseline) will be established through the pre-presentation survey.

TARGET: We anticipate that 75 percent of the 80 participants will indicate that their understanding increased and that they intend to implement some of the strategies/practices they learned at the presentations.

29 of 29 participants said that their understanding of cider production increased.

5 of 29 participants said they intend to implement some of the strategies/practices they learned at the presentations.

5 of 29 participants said they plan to attempt to add hard cider apple production to their current farm operation.

**Beneficiaries:**

Throughout the duration of the project updated project results were disseminated through presentations at Extension meetings, individual grape and apple grower site visits, and at the Kentucky Vineyard Society summer and winter meetings. There were 65 different commercial wine and beer producers that attended six different Extension meetings where results from our experiments were presented including structured tastings of research wines and ciders. Of the 65 different commercial wine and beer producers that attended Extension meetings, nearly 16 producers expressed an intension of adding sparkling wine or hard cider to their current production efforts. According to Bart Watson, Brewers Association of America Staff Economist, Kentucky breweries alone have a total economic impact of \$271 million to the state. Even a modest increase in production size and or value should provide a substantial increase to the economic impact of the current and future wine industry.

**Lessons Learned:**

Collection and dissemination of this baseline data has provided an invaluable asset for apple growers when they are deciding to establish new orchards. This data will further help hard cider producers and winemakers know what to expect from Kentucky sourced fruit to produce a balanced, high quality product.

One of the next steps in promoting this as a viable and value added product will be to connect current apple growers with potential cider producers. Availability of quality grown apples at wholesale prices may be the most challenging aspect to increasing production of Kentucky grown heard cider. Development of a web based tool to allow apple growers and cider producers to list availability and demand for fruit will be helpful to encouraging cider production in Kentucky.

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[Final Financial Report:](#)

<b>GRANT FUNDS RECEIVED</b>	<b>\$50,000</b>
<b>GRANT FUND EXPENDED</b>	<b>\$49,987.85</b>
<b>TOTAL REMAINING</b>	<b>\$12.15</b>
<b>LINE ITEMS</b>	
<b>SALARIES/ WAGES</b>	\$45,991.23
<b>BENEFITS</b>	\$
<b>TRAVEL</b>	\$

<b>EQUIPMENT</b>	\$
<b>SUPPLIES</b>	\$3,996.62
<b>CONTRACTUAL</b>	\$
<b>OTHER</b>	\$
<b>TOTAL</b>	<b>\$49,987.85</b>

**Additional information:**

<b>Cultivar</b>	<b>Source</b>	<b>pH</b>	<b>BRIX</b>	<b>T.A</b>
Arkansas Black	MSU	3.41	13.4	4.26
Arkansas Black	RVO	3.45	11.1	4.26
Autumn Gayla	HRF	4.12	14.4	2.89
Black Twig	MSU	3.44	15.9	4.94
Buckeye Gala	HRF	4.04	11.8	2.21
Cameo	HRF	3.61	12.8	4.26
Chesapeake	MSU	3.35	12.6	3.58
Chesapeake	HRF	3.69	10.6	3.92
Enterprise	HRF	3.59	13.2	5.46
Florna	HRF	3.07	13.6	3.58
Fuji	MSU	3.83	12.7	2.9
Gold Rush	HRF	3.35	14.4	7.5
Gold Rush	RVO	3.37	13.5	7.67
Golden Delicious	HRF	3.76	15.6	3.75
Golden Glory	HRF	3.87	11.3	2.39
Hawkeye Red	HRF	4.01	13.1	2.21

Delicious				
Imperial Red Delicious	HRF	4.11	13.6	2.73
Jonamac	HRF	4.04	13.4	3.41
King David	MSU	3.28	15.9	6.82
Liberty	HRF	3.62	13.2	7.33
Loriglo	HRF	3.63	12.1	4.26
Melrose	HRF	3.38	12.8	4.6
Melrouge	HRF	3.4	13.8	5.63
Mutsu	HRF	3.58	13.1	3.75
Nittany	HRF	3.51	12.3	4.26
Nova Spy	HRF	3.61	13	5.46
Pink Lady	RVO	3.58	12.2	5.29
Prime Gold	HRF	3.81	10.8	2.72
Red Chief/Red Delicious	HRF	4.09	12.7	2.39
Red Fuji	HRF	3.84	15.3	3.24
Red Stayman	HRF	3.54	13.4	4.77
Refield	MSU	3.36	12	5.8
Roxbury Russet	RVO	3.62	18.5	5.97
Royal Empire	HRF	3.74	11.4	3.58
Royal Gayla	HRF	4.14	16.2	2.89
Russet	MSU	3.86	10.1	1.7
Snap Stayman	HRF	3.44	14.3	4.77
Sonata	HRF	3.71	12.6	2.89
Spartan	HRF	3.83	12.5	3.75
Stark Winesap	RVO	3.44	13.3	5.63
Stayman Winesap	RVO	3.53	14.1	4.6
SunCrisp	HRF	3.68	14.1	4.43
Thome Empire	HRF	3.82	10.9	3.41
Virginia Gold	HRF	3.48	10.4	4.94
Wine Crisp	HRF	3.44	14.6	5.46
York	MSU	3.51	13.5	3.24
York	RVO	3.48	13.8	5.29

**HRF**=Horticultural Research  
Farm

**HRF (Strang)** = Hort Research Farm, Dr.  
Strange harvested

**MSU**= Morehead State University

**RVO**=Reed Valley  
Orchard

Sparkling cider tasting notes from apple cultivar trials

Cultivar	Tasting notes:
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Golden Glory	apple skin, slightly musty, white floral, honey, dried hay,
Red Stayman	caramalized apple pie, slightly buttery/creamy,
Stayman Winesap	clean fresh, green apple, cane sugar, fresh soil, floral (hawthorne)
York	apple, cotton candy, strawberry laffy taffy, strawberry, lime,
King David	spice (cinnamon, woody,) apple sauce, sweet (syrup), unripe peach
Arkansas Black	musty floral, wax, cedar, green leafy, vanilla, dried grass, canned pear
Chesapeake	juice conc, spice cinnamon, vanilla, white pepper, pear
Gold Rush	plastic, rubber
Pink Lady	wet cardboard, peach, floral
Redfield	Strawberry, cherry, hay, earthy, floral

List of apple cultivars planted in 2015 to high-density orchard at the UKHRF

<b>Apple Cultivar</b>
Golden Russet
Brushy Mountain Limbertwig
King David
Redfield
Ashmead's Kernel
Arkansas Black
Blacktwig
GoldRush
Grimes Golden
Roxbury Russet
Imperial Red Delicious

Apples entering grinder before being pressed



Juice samples prior to analysis



Press fractions from pressing of frozen Redfield apples



Processing and fermentation space for apple ciders at UKHRF



Pressing of frozen Redfield apples at UKHRF



## **Project 6: MarketReady Training for Specialty Crop Growers**

**Project Summary:** MarketReady is designed to help producers sell to grocery, wholesale, foodservice, school, and restaurant market channels. While this program has previously been offered in Kentucky, it continues to be in strong demand among specialty crop growers. Buyers continue to expand their interest in local products. Growers learn about critical business functions associated with commercial readiness and available marketing and business development services as they scale up. This project seeks to supplement the existing MarketReady training with expanded resources, workshops, trainings, and webinars related to packaging, pricing, insurance, marketing, grants/funding, and making new contacts. A new “Meet-the-Buyer” component is developed.

**Project Approach:** This project developed workshop modules on key business functions buyers indicated critical for market readiness that were delivered in a series of in-person workshops. The 6-hour trainings included a buyer panel – typically a chef, school foodservice director, a wholesaler, and/or a grocer. Agency partners involved with various aspects of the marketing and business functions addressed in the training participate and discuss opportunities to best utilizing these agencies to assist with market development. These have regularly included KCARD and KDA, but also insurance firms, packaging and labeling firms, SBDC, and other Extension specialists.

A new MarketReady website was developed in 2016 with the intention of better promoting trainings and housing additional related resources addressed in the trainings. There have been just over 20,000 unique page views since the new site was developed. Advanced topic webinars were developed for selected business functions that included buyers and technical business professionals targeted for more advanced growers. These included ‘Meeting Your Insurance Needs’, ‘Quality Assurance and Food Safety’, and ‘Meet the buyer programs were set up for MarketReady alumni. These programs offered rotating engagement opportunities for both specialty crop growers and buyers to explore trade opportunities.

**Goals and Outcomes Achieved:** The stated goal was to provide 10 MarketReady trainings and reach 150 additional specialty crop producers to strengthen key business functions identified by buyers. We had 10 trainings that were offered during the grant period 2015-17 but included some of the activity of previous trainees that participated in subsequent Meet the Buyer and other post-training functions. The tables 1-3 below summarize participation during the course of the project, in very close initial estimation of reach. The final table summarizes new contacts made for each growers and buyers at the Meet the Buyer events during the project. The new market connections developed for both growers and for buyers was a great success, very much in line with our targets outlined in the proposal, and we continue to follow the evolution of these relationships.

A goal of increased buyer contacts for specialty crop growers was targeted. A total of 4 functions uniquely offered through the MarketReady program were provided with generous hosting support from the Kentucky Farm Bureau. Additional meet the buyer functions provided in collaboration with the Kentucky Department of Agriculture, the Center for Crop Diversification, and the KY Vegetable Growers Association have also been provided that have specifically been promoted through the MarketReady alumni list. A summary of the specific MarketReady directed meet the buyer functions is presented in Table 3. MarketReady continues to be in high demand among many of our KY specialty crop producers and buyers and has subsequently been adapted for use now in 15 states. Additional MarketReady trainings are scheduled for delivery this Fall and Winter.

**Table 1**

<b>MarketReady Trainings</b>		
	<b>Locations</b>	<b>Attendance</b>
<b>2017</b>	5*	46
<b>2016</b>	3	20
<b>2015</b>	2	27
<b>2014</b>	3	52
<b>Total</b>	<b>13</b>	<b>145</b>

\*1 location was a MarketReady Basics Training.  
2017 additionally included 2 out-of-state trainings with a total of 30 participants.

**Table 2**

<b>Meet the Buyer Forum</b>		
	<b>Locations</b>	<b>Attendance</b>
<b>2017</b>	1	17
<b>2016</b>	1	18
<b>2015</b>	2	39
<b>2014</b>	1	39
<b>Total</b>	<b>5</b>	<b>113</b>

**Table 3**

<b>New Contacts Made During Meet the Buyer Forum</b>			
	<b>Producers</b>	<b>Buyers</b>	<b>Total Contacts Made</b>
<b>2017</b>	137	25	162
<b>2016</b>	108	8	116
<b>2015</b>	154	74	228
<b>2014</b>	188	185	373
<b>Total</b>	<b>587</b>	<b>292</b>	<b>879</b>

A 6 month follow-up training impact survey was conducted throughout the life of the project seeking to identify increased awareness and utilization of marketing programs and technical resources available from various agencies. Results from post-training agency contacts and subsequent helpfulness are summarized in Table 5. Table 6 summarizes application activity to related programs from the 6-month follow-up survey by those that participated in the MarketReady training. Table 7 identifies specific changes that were made during the 6 months post training or were intended to be made.

**Table 4**

<b>Contacts Created Post-Training</b>			
<b>Restaurants</b>	<b>Grocery</b>	<b>Wholesale/Institution (School, Hospital, Foodservice)</b>	<b>Other</b>
	51%	37%	87%

The percent of producers making contact post-training with these markets. "Other" markets included CSA, Farmers Market, Roadside Markets, Individuals, and Direct-to-Consumer retail facilities.

**Table 5**

Contact with Organization					
	No	Plan to	Yes		
			Not Helpful	Somewhat helpful	Very helpful
Kentucky Department of Agriculture	18%	12%	0%	17%	49%
Food Systems Innovation Center	53%	12%	1%	1%	8%
Kentucky Department of Health	37%	21%	1%	8%	14%
MarketReady Website	47%	11%	1%	11%	24%
Kentucky Cooperative Extension Services	8%	11%	1%	24%	53%

**Table 6*****Application and Registrations Submitted***

	No	Plan to	Yes
<b><i>KY Proud</i></b>	11%	12%	71%
<b><i>KDA Restaurant Rewards</i></b>	57%	18%	4%
<b><i>KY Proud POP Grants</i></b>	36%	39%	11%
<b><i>MarketMaker</i></b>	34%	28%	16%

The project targeted at least 50% of trainees to have addressed each of the core business functions within 6 months of receiving the training.

**Table 7.**

<b>Changes were made to business</b>			
	<b>No</b>	<b>Plan to</b>	<b>Yes</b>
<b>Create or redo business logo</b>	36%	21%	37%
<b>Reorganize business records</b>	28%	28%	41%
<b>Talked with buyers about or reconsidered packaging</b>	33%	14%	37%
<b>Started utilizing social media</b>	24%	20%	51%
<b>Checked into insurance plans</b>	20%	25%	51%
<b>Estimated costs to sell to a new market</b>	25%	25%	45%
<b>Worked through your MarketReady Self-Audit checklist</b>	38%	36%	18%

Participants were asked to identify their specific marketing challenges where they still needed help. This information was utilized in the creation of the advanced topic webinars and further related marketing resources.

**Table 8.**

<b>Biggest questions still relate too...</b>					
	<b>In good shape</b>		<b>Making some progress</b>		<b>Need lots of help</b>
<b>Making new buyer contacts</b>	26%	13%	33%	7%	14%
<b>Estimating my costs to serve these markets</b>	21%	12%	43%	5%	13%
<b>Understanding the label and certification requirements</b>	39%	11%	29%	3%	14%
<b>How to distribute</b>	22%	14%	39%	7%	13%
<b>Quality control and assurance</b>	34%	17%	28%	7%	9%
<b>Business forms and records</b>	32%	3%	32%	11%	16%

Developing marketing materials	21%	13%	33%	11%	16%
Packaging	29%	14%	16%	21%	13%
Label Development	33%	14%	13%	14%	16%
Insurance, liability, and risk	38%	9%	18%	9%	21%
Price information and negotiation	24%	17%	25%	13%	14%

Risk management assistance and help with insurance specifically has continued to be a critical area of need. We identified a specific goal of increasing the number of specialty crop growers utilizing risk management and insurance audit tools. The project would target distribution of the insurance audit materials to 400 specialty crop growers, and will aim for 50% of MarketReady trainees to have completed an audit for their farm within 6 months of training. Training and audit materials would be developed in collaboration with insurance and risk management professionals currently working with farms and the food industry.

We used three mechanisms to more deeply address risk management and insurance issues with the trainees. We developed two publications on insurance and food safety/quality assurance that were posted as new resources to our website and distributed at each training<sup>1</sup>. We also identified an excellent insurance education publication by NC State and the NC Department of Agriculture<sup>2</sup> which was distributed to past MarketReady trainees and distributed at the subsequent trainings. We expended our coverage of the risk management and insurance topic actually within the training itself. But perhaps the most effective resource was the development of a webinar on the topic led by an insurance agent, an commercial underwriter, and a produce distributor.

Three advanced topic MarketReady webinars were developed with approximately 20-30 attending each session live and another 150 views post live delivery at the Market Ready YouTube Channel recordings (<https://www.youtube.com/channel/UCXoVol8WytisAzPIDnkXVEA>). These included added views for food safety (67), insurance (45), and branding (38). Another 139 views were made subsequently directly on the MarketReady site ([www.uky.edu/MarketReady](http://www.uky.edu/MarketReady)) with food safety (53), insurance (53) and branding (33) observed there. A subsequent webinar on packaging and labeling was just completed.

**Beneficiaries:** The primary beneficiaries included small to medium scale specialty crop growers seeking to enter commercial markets as well as local buyers seeking to expend their local sourcing across various market channels. Growers were better prepared to engage commercial buyers and significantly expanded their buyer contacts through connections they made with the training buyer panels, links to KDA and other marketing agencies, and the Meet the Buyer Programs.

Our estimates of the direct specialty crop grower beneficiaries (direct training, meet the buyer, and advanced topic resources) is about 250 within Kentucky. Approximately 75 commercial buyers have directly engaged with the growers during this time through meet the buyer functions, live training buyer panels, and advanced topic webinars.

**Lessons Learned:** We continue to find ways to adapt the MarketReady material to meet different specialty crop grower audiences. This includes the subsequent development of a

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<sup>1</sup> Tim Woods and Alex Butler, "[Insurance Checklist for Restaurant, Grocery, Wholesale, and Institutional Sales Business Practice Summary](#)" and "[Quality Assurance and Food Safety Checklist for Restaurant, Grocery, Wholesale and Institution Sales Business Practice Summary](#)"

<sup>2</sup> Roderick Rejesus and Annette Dunlap, "Insurance Coverage Options for Fresh Produce Growers", NC State University Extension Publication AG-710, January 2009.

MarketReady Basics aimed at producers fitting the ‘new and beginning’ farmer groups. Increased interest in foodservice and farm-to-school has resulted in a significant expansion of examples and opportunities for producers in that channel. The webinar topics and resources have been excellent, with strong reviews from those participating. We continue to look for better ways to promote ‘live’ participation. Webinars are recorded and posted to the MarketReady website, but most of the meaningful engagement comes during the live programs. We are striving to promote further programs through the UK Center for Crop Diversification to strengthen awareness and participation.

Many useful resources have been developed through MarketReady trainings in other states. We have endeavored to share resources with trainers in other states through shared Google folders, which has worked reasonably well. More trainer resources are going to be necessary in the future as the program expands.

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**Additional Information:** The MarketReady website is the main platform for announcing trainings, providing partner links, highlighting the resources relating to the various business functions, and serving as a repository for recordings of the various webinars.

[www.uky.edu/MarketReady](http://www.uky.edu/MarketReady)

**Final Financial Report:** A detailed expenditure summary has been provided and is summarized below. All funds were expended with minor changes based on the initial budget allocation.

<b>GRANT FUNDS RECEIVED</b>	<b>\$32,811.00</b>
<b>GRANT FUNDS EXPENDED</b>	\$32,811.00
<b>TOTAL REMAINING</b>	\$0.00
<b>LINE ITEMS</b>	
<b>SALARIES/WAGES</b>	\$15,336.68
<b>BENEFITS</b>	\$5,931.73
<b>TRAVEL</b>	\$3,766.73

<b>EQUIPMENT</b>	\$0.00
<b>SUPPLIES</b>	\$2,883.61
<b>CONTRACTUAL</b>	\$0.00
<b>OTHER</b>	\$4,892.25
<b>TOTAL</b>	\$32,811.00

## **Project 7: Plate It Up! Kentucky Proud Recipe Development and Evaluation for Consumers and Producers Using Healthy Specialty Cooking Techniques with an Emphasis on Grilling**

### **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* 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 2014 project was specifically targeted at developing recipes incorporating specialty cooking techniques, including grilling, roasting, microwaving, and stir-frying. Recipes continued to be developed that included readily available ingredients, were budget-friendly, were family-friendly, and were developed according to dietary guideline recommendations.

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**

Cooperative Extension agents in each of the 120 counties partnered with local producers and the Kentucky Department of Agriculture to adapt, develop, publicize and demonstrate recipes that promote Kentucky specialty crops. The recipes were designed by dietetics and human nutrition students at the University of Kentucky to be healthy, tasty, easy to prepare and feature Kentucky-grown fruits, vegetables, herbs, nuts, etc. to promote purchase, preparation and

consumption by the local consumer. Both on-campus taste testing panels and consumer taste panels in the counties critiqued the recipes. Select recipes were then developed as professional recipe cards designed by a graphic designer for both printing and online distribution. The recipes were disseminated via websites, point of purchase recipe cards, newsletters, Facebook and media (TV, print). Media releases and demonstration scripts were developed to complement each recipe. Extension agents also shared the recipes via demonstrations and sampling at various venues within the local community. Producers distributed recipe cards at local farmer's markets, through roadside market stands, and through CSA distribution.

## Goals and Outcomes Achieved

**GOAL:** 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 using specialty cooking techniques, including grilling, roasting, microwaving, and stir-frying, will be developed. The recipes will continue to be economical to prepare, family-friendly, and meet MyPlate guidelines.

- Goal is exceeded with 21 recipes tested in Fall 2015 and 34 recipes tested in Spring 2016 (55 total recipes tested). For the scope of this grant funding cycle, recipes using specialty cooking techniques, including grilling, roasting, microwaving, and stir-frying, were developed. The recipes continued to be economical to prepare, family-friendly, and, if at all possible, met MyPlate guidelines.
- Recipes were all evaluated by an 8 to 10-person taste-testing panel recruited through the UK Food Innovations Center. Each taste panel also included two FCS Extension agents. Taste tester feedback was provided through sensory evaluation scoring using Ipads 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.
- The *Plate It Up* statewide committee met in December, 2015 and May, 2016 to select the recipes that were further tested in the community. This selection was based on the on-campus taste tester feedback.
- Fifteen 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.

### New Recipe Cards Developed

Bleu Cheese Potato Salad  
Cabbage Rolls  
Curried Chicken and Melon Salad  
Dijon Chicken Asparagus Roll Ups  
Eggplant Parmesan Rollatini  
Farmer's Market Skillet Bake  
Greek Style Spaghetti Squash  
Green Bean Medley

Kale Pesto  
Lean Green Lettuce Tacos  
Peachy Breakfast Bake  
Summer Garden Lazagna  
Summer Squash Pizza  
Summer Veggie and Wild Rice Bake  
Tex Mex Spaghetti Squash Casserole

**GOAL**      **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.**

- Media scripts and demonstration guides were developed for each of the 15 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 *Plate It Up! Kentucky Proud* 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/>.
- In addition to these new educational materials, through a collaboration with Nutrition Education Program (NEP), 15 of the previously developed recipe cards have been translated into Spanish to better meet the needs of a diverse Kentucky population.

**GOAL**      **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.**

- Recipe cards for each of the 15 new recipes were distributed to all counties (250 per county) in the state of Kentucky. As well, reprints of five popular recipe cards were distributed to all FCS Extension agents (250 per county) – Blueberry Pound Cake, Cucumber Corn and Bean Salsa, Easy Peach Cobbler, Pumpkin Apple Muffins, and Watermelon Tomato Salad. Additional recipe cards were also distributed at specialty activities on the University of Kentucky campus, including the weekly UK Farmers Market, and throughout the state of Kentucky.
- FCS Extension agents showcased the *Plate It Up! Kentucky Proud* project at the Kentucky State Fair in August, 2016. 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 Big Blue

Muffin recipe were provided as part of the state Commodity Breakfast to open the State Fair. Recipe cards and other promotional items were also distributed at the breakfast.

- The graduate research assistant for the project will continue to provide samples and educational materials weekly at the on-campus Farmer's Market at the University of Kentucky. The market runs mid-May through mid-August.
- The consumer website has been updated and modernized with all PIUKP recipes. The website –<http://plateitup.ca.uky.edu> - is in addition to the Kentucky Proud recipe database already available through the Kentucky Department of Agriculture.
- Study personnel have worked with FCS Extension associates to survey farmers market patrons on their knowledge, awareness, and use of Kentucky specialty crops.
- The following peer-reviewed abstracts were presented on the *Plate It Up! Kentucky Proud* project at professional conferences. These conferences include the Society for Nutrition Education & Behavior Annual Meeting in San Diego, CA in August, 2016 and July, 2017 and the Academy of Nutrition and Dietetics Annual Meeting in Boston, MA in October, 2016.
  - DeWitt E, Gustafson A, Mullens J, and **Stephenson T**. Social Marketing Campaign at Farmers' Markets to Encourage Fruit and Vegetable Purchases in Rural Counties with a High Obesity Prevalence. 2017 Society for Nutrition Education and Behavior Annual Meeting, Washington DC, USA
  - Humphrey A, Dickens, E, Brewer D, Gaetke L, and Stephenson T. *Plate It Up! Kentucky Proud* Recipe Sampling at Senior Centers: Promoting knowledge of locally grown fruits and vegetables. 2016 Society for Nutrition Education and Behavior Annual Meeting, San Diego, CA, USA
  - Dickens E, Humphrey A, Stephenson T, Gaetke L, and Brewer D. Color Your Plate: A pilot nutrition education intervention to increase fruit and vegetable intake among seniors participating in congregate meal site program in Kentucky Senior Centers. 2016 Academy of Nutrition & Dietetics FNCE Annual Meeting, Boston, MA, USA
- The following peer-reviewed articles related to the project have been accepted for publication.
  - DeWitt E, Webber K, **Stephenson T**, Gustafson A. Community-Based Marketing Campaign at Farmers' Markets as a Way to Encourage Fruit and Vegetable Purchases Among Rural Obese Counties, Kentucky, 2015-2016. *Preventing Chronic Disease*. Accepted for Publication.
  - Liu E, Houlihan J, Stephenson T, Gustafson A. Marketing Strategies within Grocery Stores as a Way to Encourage Fruit and Vegetable Purchases Among Rural High Prevalence Obesity Counties. *Preventing Chronic Disease*. Accepted for Publication.
  - Brewer D, Dickens, E, Humphrey A, **Stephenson T**. 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.
- Data has been collected from FCS Extension agents through the UK CES impact reporting system (results below).
- 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 below).

## **2016-2017 FCS Extension Agent Priority Indicator Report**

2061 - Plate It Up! Kentucky Proud		
2061.1)	20,133	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)	25,537	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)	13,971	Number of individuals who indicated that they purchased the fruits and vegetables featured on the Plate It Up! recipe card
2061.4)	9,062	Number of individuals who reported an increase in their fruit and/or vegetable consumption
2061.5)	2,828	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)	2,932	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)	405	Number of vendors reporting increased sales at markets where Plate It Up Kentucky Proud recipes are tasted or recipe cards distributed
2061.8)	17,797	Dollar value of vendor-reported increased sales associated with Plate It Up Kentucky Proud recipes tasted or cards distributed

## **2016-2017 FCS Extension Agent Success Stories**

### **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. 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 essential.

Over the course of one year, the Caldwell County Family & Consumer Sciences Agent taught a series of nutrition-themed lessons at the local senior citizens center to thirty participants. Topics included: MyPlate, fruit and vegetable consumption, portion control, limiting sodium, limiting sugars, and limiting fats. A Plate It Up! Kentucky Proud food sample was offered during each lesson. Participants were surveyed following the last program in the series. 95% of participants surveyed reported improved knowledge of healthy eating practices. 90% made a lifestyle change to improve their health, including (but not limited to) reducing sodium/sugar in diet and increasing fruit and vegetable intake. 71% reported purchasing a fruit or vegetable after trying a sample of the recipe and receiving the recipe card. 86% have increased their fruit and vegetable intake. Participants commented that the program series was informative and enjoyable.

## CHRISTIAN COUNTY SUCCESS STORY:

Plate it up! is a joint program between the Cooperative Extension Service, Human Environmental Sciences and the Kentucky Department of Agriculture. This program promotes locally grown commodities and encourages consumers to buy locally. The downtown farmers market has sixteen vendors that provide locally grown fresh produce for the community. Six are vendors participating in the Farmers Market Food Nutrition Program (FMNP) for Women, Infant, and Children (WIC), these programs help to increase the consumption of produce by low income families, and also has the goal of creating a more healthy lifestyle and reducing obesity. In order to promote the Plate It Up! program

the Christian County Extension office developed a 27-page buyers guide for consumers that details how to apply for farmers market Senior Vouchers, how to use EBT and debit cards at the market, healthy eating tips, tips on selecting fresh fruit and vegetables twenty Plate It Up! recipes and the market calendar. Each Wednesday, for twenty weeks an agent or program assistant of the Christian County Extension Service represents the program by distributing samples featured recipes. Approximately 50 people participate in the recipe tastings each week. Many people have tasted a recipe said they plan to use that dish for their family. The market vendors also said buyers look forward to the weekly samples. Over 800 copies of the buyer's guide have been distributed to market patrons, the housing authority, health fairs, civic groups, senior citizens center, the women's shelter, and the county fair.

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.

### **LIVINGSTON COUNTY SUCCESS STORY:**

The Livingston County FCS agent Morgan Rousseau presented Plate it up! Kentucky Proud to 30 participants at Livingston Hospital and Health systems in September. After the program, 100% of session participants answered that they were “yes, definitely” more aware of national brand Kentucky Proud products sold in supermarkets that are grown and manufactured in Kentucky. As a result of the program 73% of participants said they were definitely more likely to focus more on buying Kentucky Proud fruit, vegetables, and other products; while the other 28% of participants said they probably will. 65% of participants said they do plan to make one of the Plate it up! Kentucky Proud recipes given out at this program. 100% of participants agreed that after the presentation they are aware of what the Kentucky Proud program and branding is trying to accomplish across Kentucky. One participant stated that their favorite thing about the session was “learning about local places to buy Kentucky Proud products” and another said they enjoyed “learning what Kentucky Proud is about and what you can get from the Plate It Up program”. The Plate it up! Kentucky Proud program can potentially demonstrate positive change in both knowledge and behavior.

### **MADISON COUNTY SUCCESS STORY:**

Kentucky is one of the lowest ranked states for chronic health issues such as cancer and diabetes due to lack of physical activity and poor eating habits. The University of Kentucky Cooperative Extension Service, the Kentucky Department of Agriculture and the University of Kentucky School of Human Environmental Sciences partnered to create the Plate it Up Kentucky Proud program. This project provides healthy, great tasting recipes using Kentucky Proud products for the people of Kentucky.

While the Plate it Up committee is primarily composed of Family and Consumer Science Agents, the Madison County Cooperative Extension Agent for Horticulture was asked to serve as a horticulture and gardening advisor to the group. In addition, the agent also posted gardening information on the Plate it UP Facebook page once every two weeks between February 26th to October 6th. The goal was to encourage Kentucky residents to grow a garden in order to increase access to vegetables and improve their diets.

A few of the most popular topics posted were when to start a garden, when particular vegetables can be planted, disease control, beneficial insects, and information on specific vegetables and fruits such as kale, peas, eggplant and watermelon.

Including horticulture related posts on the Plate it up! Kentucky Proud Facebook page has helped to expand the project and reach new audiences. Since February 2016, when the horticulture related posts began, the Plate it up! Kentucky Proud Facebook page has seen an increase in page likes by 25%. The seventeen horticulture posts reached in total just under 27,500 views.

### **MONTGOMERY 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. According to the most recent Kentucky County Healthcare Profile, 31.8% of adults in Montgomery County are obese. There is a need in healthier lifestyle changes including healthier diets.

In an effort to encourage Montgomery County senior citizens to consume more locally grown

fruits and vegetables and increase knowledge of cooking with commodities grown in Kentucky, the Family and Consumer Sciences Extension Agent worked with 2 senior centers in the county, to provide educational programming and twelve samples of various Plate It Up! Kentucky Proud recipes. As a result, 74% of the seniors stated they were somewhat likely to definitely likely to try the recipes at home upon the taste test. After receiving the recipe card after each session, over 50% stated they were likely to purchase locally grown fruits and vegetables when available.

#### **MORGAN COUNTY SUCCESS STORY:**

Almost twenty years ago, Morgan County Extension volunteer leaders and extension agents recognized the need for a local Farmers Market to address dire economic and health needs of our community. From writing the first grant to establish the Farmers Market to developing a one day festival promoting the Farmers Market known as "Market in the Park," the Extension Service continues to provide valuable organizational, educational, agronomic and family and consumer sciences support to this group.

Agent led trainings include WIC/Senior Farmers Market voucher workshops, Good Agricultural Practices (GAP) orientation, Home-Based Micro-processing and Sampling certifications, regional marketing workshops, vegetable production courses and 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. Number of new vendors increasing from 5 to 11;
4. A 38% rise in WIC and Senior Farmers Market voucher redemption rates;
5. 100% participation in Appalachia/Ky Proud program;
6. Expansion in variety of products offered;
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.

#### **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 2016 to June 2017. Over 864 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’m trying to find new ways of preparing fruits and veggies so this is perfect”, “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 vegetables like this; it’s delicious!”, and “I have everything we need to make that. I was just saying we needed a new snack.” Additional educational classes and follow up evaluation is planned, but 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.

#### **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.

#### **WEBSTER COUNTY SUCCESS STORY:**

According to the Center for Disease Control data, [www.cdc.gov](http://www.cdc.gov), Childhood obesity has more than doubled in children in the past 30 years. The percentage of children aged 6–11 years in the United States who were obese increased from 7% in 1980 to nearly 18% in 2012. Immediate health effects that can affect obese youth are higher risk factors for cardiovascular disease, high cholesterol and high blood pressure. The long-term health effects can be that obese children have a higher risk for being obese as adults and having health problems such as heart disease, type 2 diabetes, and stroke.

Healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming obese and developing related diseases. The dietary and physical activity behaviors of children are influenced by many sectors of society, including families, communities and schools. Schools play a particularly critical role by establishing a safe and supportive environment with policies and practices that support healthy behaviors. Schools also provide opportunities for students to learn about and practice healthy eating. The Webster County Family and Consumer Sciences Extension Agent collaborated with the Family Resource Center Coordinator at two of the county elementary schools to incorporate taste testing during lunch for Kindergarten thru 6th grade students. The taste testing is set up in the lunch room once a month at each school. The goal of this is to offer new, healthy foods to all students and encourage them to try new foods. They evaluated the new food by doing a sticker vote if they like it or not. Several students have asked if their voting would determine if the food would be added to the lunch room menu at school. The Family Resource coordinator and FCS Extension

agent are currently working on this with the school. Over 90% of the students (almost 600 students in total try the food each month) voted that they liked the food samples each month. They have sampled items that include: pumpkin, figs, pomegranate, cucumber, corn, black beans and tomatoes. Some of the recipes are the Plate It Up Kentucky Proud recipes provided by UK.

Students now ask us when we are coming back, what they will be trying next time and they make sure their teachers and friends try the foods. One student has asked for the recipe to give to his grandmother so they can make it at home. This taste testing is not only an opportunity for the students to try something new but also for them to teach their families about something new and maybe incorporate it in their meals at home.

**GOAL:** 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 five 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.

### Surveying at Farmer's Markets Summer 2017

Undergraduate and graduate research assistants from the Department of Dietetics and Human Nutrition sampled consumers at seven farmer's markets throughout the state. Sampling was conducted in Trigg County (n=24), Metcalfe County (n=12), Warren County (n=42), Nicholasville (n=34), Fayette County (n=74), Russell County (n=8), and Knox County (n=18). Surveying was conducted at the farmer's markets between June and August, 2017 and was done in conjunction with sampling by a FCS Extension agent at the market. The agent would provide the sample and recipe card and the student research assistants would collect survey data. The farmer's markets evaluated as part of this project were diverse in location, number of producers, and day of the week.





Of those surveyed (n=212), 22% had previously tasted a sample of a PIUKP recipe before coming to the market. On average, taste testers rated their overall impression of the sample as a  $8.63 \pm 1.71$  on a 10-point Liker-scale with 10 being “Loved Flavor, Will Definitely Make at Home.” Consumers were also asked to rate the likelihood they would purchase one or more of the commodities spotlighted in the sampled recipe. On a 10-point Liker-scale (10=most likely to purchase), consumers rated their likelihood to buy that day as  $7.61 \pm 2.42$  and at a later day as  $8.54 \pm 1.85$ . These results suggest that the majority of consumers are purchasing the produce following sampling.

Consumers were also asked if they normally tried samples and/or took recipe cards at the grocery and/or farmers market. For trying samples, 46% of consumers indicated they sometimes try samples and 42% indicated they frequently try samples. For taking recipe cards, 47% of consumers indicated they sometimes take recipe cards and 38% indicated they frequently take recipe cards. On a 10-point Liker-scale with 10 being “Will definitely prepare,” consumers rated that sampling contributes to their plan to make the recipe as  $8.07 \pm 2.36$  and that having recipe cards contributes to their plan to make the recipe as  $7.96 \pm 2.56$ . The sample surveyed at the farmer’s market reported the consumed relatively large amounts of fruits and vegetables during the summer months of the sampling. Daily fruit intake was reported as  $2.39 \pm 1.24$  servings and daily vegetable intake was reported as  $2.85 \pm 1.24$  servings.

- Data was collected from FCS Extension agents through the UK CES impact reporting system. A total of 89 counties reported demonstrating the PIUKP project through a variety of events, farmers market activities, and grocery store demonstrations.

**GOAL**      **Research the effectiveness of the overall project by collecting, analyzing, and preparing reports using evaluation data collected for the grant period:**  
**a. FCS Agent surveys. We are on target to use Qualtrics to survey agents on recipe card use, producer and consumer responses to recipe cards, and outcomes to educational programs as a result of project participation.**

**b. FCS Agent project reports.** From July 1, 2016 to June 30, 2017 data will also be collected via the UK CES impact reporting system via specific featured program questions designed for agents to measure consumer behavior change as a result of using the recipe cards developed in this grant project.

**c. Specialty Crop Producers.** We are on target to recruit FCS Agents in five pilot counties to 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.

- 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.
- During spring/summer 2017, 28 producers completed anonymous surveys related to the *Plate It Up! Kentucky Proud* project.
  - 64% of producers had heard of *Plate It Up! Kentucky Proud*
  - 54% of producers reported they had seen *Plate It Up! Kentucky Proud* recipe cards in person
  - 46% of producers reported they had tasted a sample of a *Plate It Up! Kentucky Proud* recipe (most often samples that had been prepared and distributed by the FCS Extension agent in the county)
  - 54% of producers reported that *Plate It Up! Kentucky Proud* 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.
  
  - 100% of producers indicated that they believe that having *Plate It Up! Kentucky Proud* recipe cards at the market increases consumer interest in the featured commodities
  - 100% of producers indicated that they believe that having *Plate It Up! Kentucky Proud* recipe cards at the market increases sales in the featured commodities
  - Sample comments from the producers:
    - 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

## **Beneficiaries**

*Extension Professionals:* Extension agents in each of the 120 counties in Kentucky have used and benefited professionally from the materials provided in this project. The recipe cards, media scripts and demonstration guides have been shared extensively by Nutrition Education Program assistants, Family and Consumer Sciences agents, Agriculture agents and Horticulture agents as well as Master Gardeners and Master Food Volunteers. The materials lend themselves well to be adapted to face-to-face, social media, television, radio, and print outreach efforts to maximize their potential reach.

*Producers:* During this FY 2014 grant period, producers again indicated that recipe cards have a positive impact on generating interest in Kentucky grown fruits and vegetables and potentially sales. There continues to be more demand for recipe cards by producers than there is funding to print the cards. Producers also continue to request recipe cards for specific commodities, particularly lesser-known commodities and/or unique varieties. Producers support sampling of PIUKP recipe cards to generate interest in commodity purchase.

*Consumers:* Consumers have been impacted based upon the surveys and Extension agent feedback. Approximately two million recipe cards have been disseminated to consumers during the course of the PIUKP project. Based on the consistent feedback that at least 20% of the consumer survey respondents indicate that they bought the featured Kentucky commodity after receiving the recipe card it is therefore possible that at least 20% of the recipe cards disseminated could have generated revenue for local producers. FCS Extension agents reported that, through their *Plate It Up! Kentucky Proud* programming, 20,133 consumers indicated they are more likely to buy Kentucky specialty crops because of the recipe sampling, 25,537 consumers indicated they are more likely to buy Kentucky specialty crops because of the recipe card, and 13,971 consumers indicated they purchased locally grown specialty crops because of the recipe card and/or sampling. At this time there is not a quantifiable metric to capture the economic benefit to the local food system of this project.

*Students:* DHN students have gained research and recipe development/adaptation experience in a real world setting through this service-learning project. Classroom evaluations indicate high satisfaction with the project. Students value the application of this project and report that they feel a high level of accountability with this project because their recipe modifications will actually be utilized throughout the state of Kentucky. Students value this learner-centered teaching approach and indicate that this is one of the most impactful projects of their undergraduate nutrition coursework. Secondary to recipe development, DHN students all report having a better knowledge and appreciation of Kentucky-grown commodities. Students feel more comfortable and confident in making fruit and vegetable recommendations. Prior to this project, many students had never heard of some of these local commodities, or did not know how the product could be used in food preparation. Given the importance of fruits and vegetables in a healthy diet, student knowledge of locally-grown produce is essential

## Lessoned 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. As such, the first PIUKP administrative committee was held in Summer, 2014 and the committee continues to meet 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.

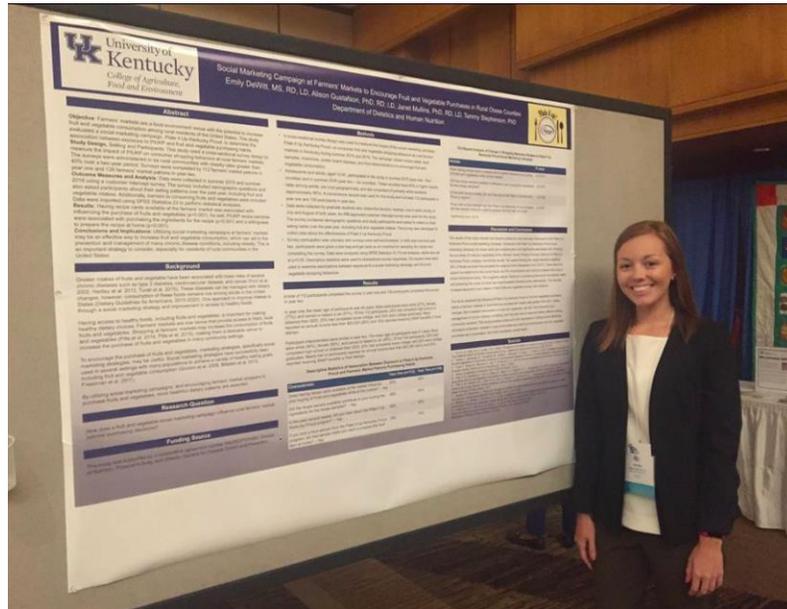
## Contact Person

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## ADDITIONAL INFORMATION

### Presentation of PIUKP at National Conferences

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.”



### PIUKP Marketing – Online and Social Media Presence

Based on stakeholder input, the *Plate It Up* website has been completely updated. As well, a “Pin It” button has been added with each recipe for those who use Pinterest – <http://plateitup.ca.uky.edu>

**Broccoli Chowder**

**Ingredients:**

- 2 tablespoons canola oil
- 3 cups chopped onion
- 2 cups garlic, finely minced
- 1 cup chopped celery
- 2 cups sliced, unpeeled cauliflower
- 2 cups broccoli florets
- 16 tablespoons (2 cups) evaporated milk
- 1/2 teaspoon salt
- 1/2 teaspoon pepper
- 2 tablespoons chives (optional)
- 2 1/2 cups low sodium chicken broth
- 1 cup low-fat, shredded cheddar

**Directions:**

In a large heavy pot, heat the oil over medium heat. Add the onion and garlic and sauté 2-3 minutes. Add the celery and carrots and sauté for 2-3 minutes. Add the cauliflower and broccoli and sauté for 2-3 minutes. Add the chicken broth and evaporated milk. Bring to a boil, then reduce heat to a simmer and simmer for 15-20 minutes. Add the chives and shredded cheddar. Stir to combine. Serve hot.

**Multicultural Analysis:**

185 points  
5 ingredients

The PIUKP project maintains an active presence through social media, including Facebook (1,941 current followers, up from 1,516 in October 2016) and Twitter. Former PIUKP Steering Committee Chair Melinda McCulley coordinates the social media presence for the project.

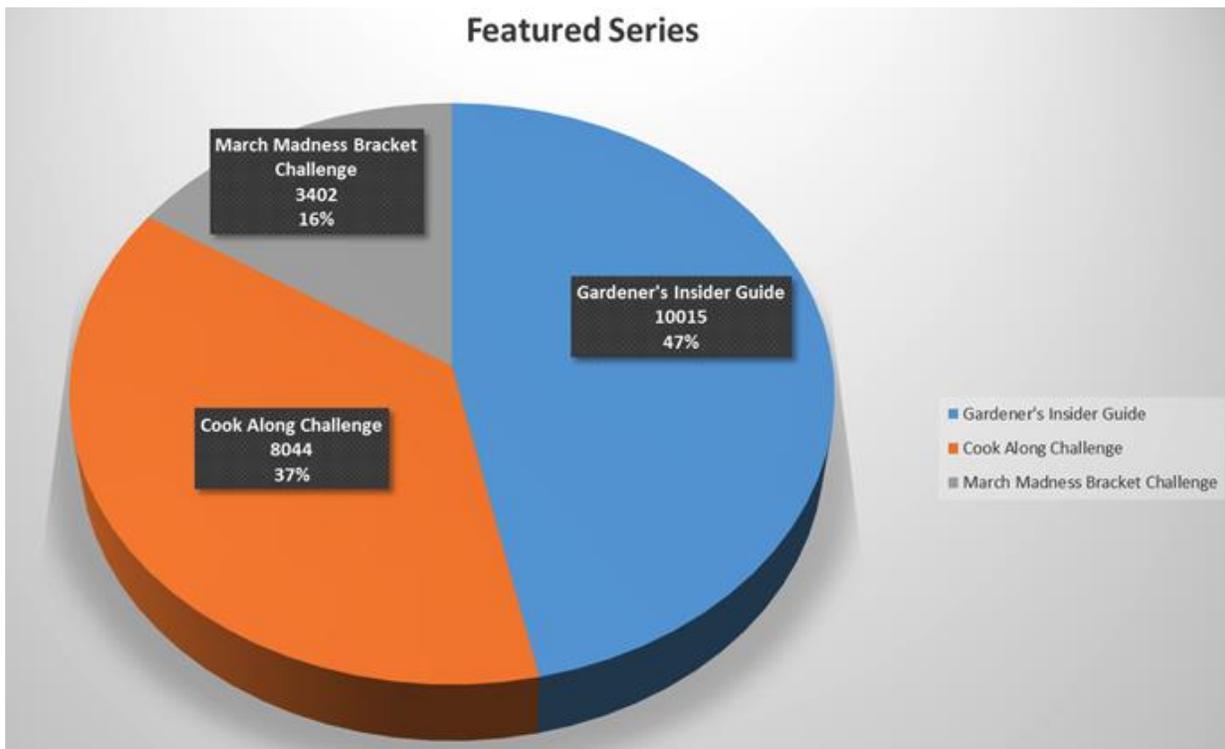
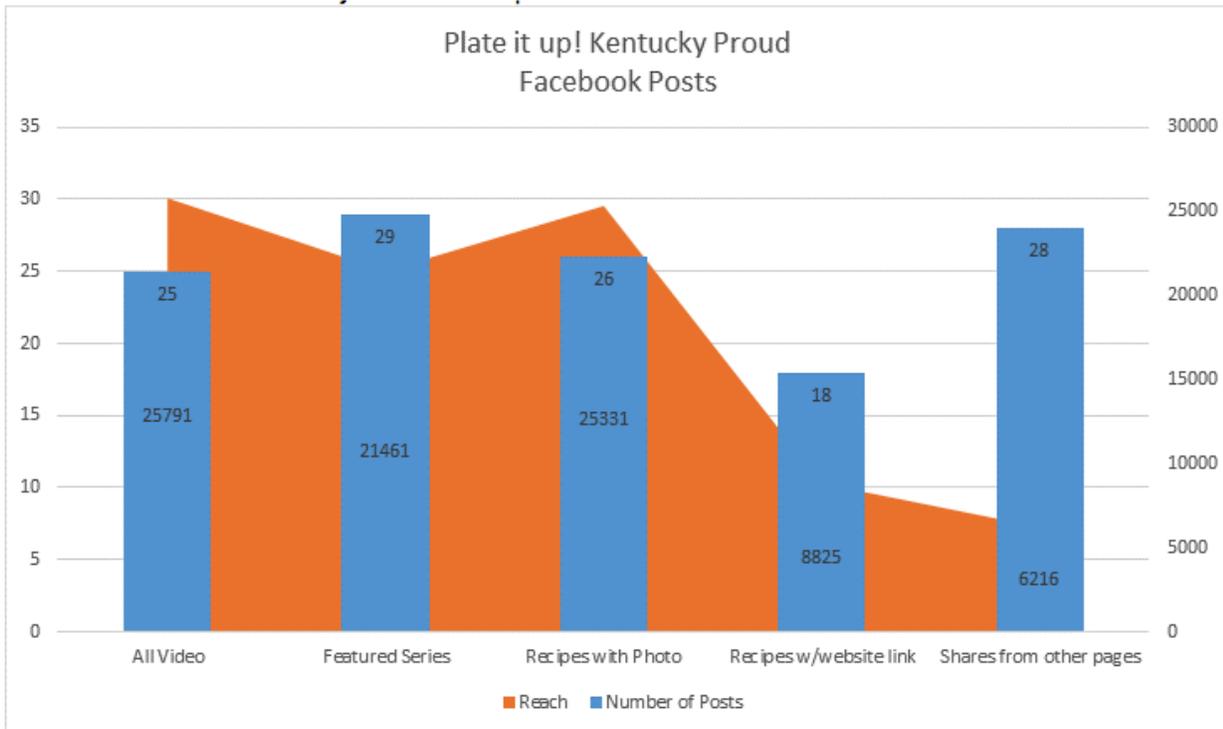


Over the past year, PIUKP Facebook posts have generated the following insights:

- Total posts: 126 page posts this year have reached 87,624 people
- Post types include video (live and recorded featuring recipe demonstrations by agents and interns), recipe posts with videos, recipe posts with website link, and shorts from other pages featuring PIUKP content (extension office sites, farmers market sites, school sites, and UK departmental/college sites).

Additionally, we have had three series features:

- The **Cook Along Challenge** encouraged followers to prepare a particular recipe each week for 12 weeks.
- The **Gardener's Insider Guide** features tips for the home gardener from our Horticulture Agent Committee member (posts every other week from March through October).
- The **March Madness Bracket Challenge** – each NCAA tournament team was paired with a recipe and as the team advanced, so did the recipe. The winning recipe this year was Sweet Potato Crisp!



The PIUKP website provides links and photos for all of the recipe cards – [plateitup.ca.uky.edu](http://plateitup.ca.uky.edu)

- The average monthly visits were 2,770 with June and July being peak months (3,200-3,700 visits).
- The site has 1,840 unique visitors each month.
- 109 different PIUKP recipes have been accessed through the website.

### **National Recognition:**

The *Plate It Up* project was recognized by the National Extension Association of Family & Consumer Sciences with the 2015 “1<sup>st</sup> Place Southern Region in the Social Networking category.”



**Date:** June 2, 2015

**Subject:** 2015 NEAFCS Award Notification

Dear Melinda:

Congratulations! Your application in the **Social Networking** category titled “Extending our Reach with Plate it up! Kentucky Proud” has been selected as a **1st Place Southern Region Winner** in the NEAFCS Annual Awards Program. If this was a Team award, please notify your Team members, and extend my congratulations to them as well.

Awards will be presented at the Annual Session at the Greenbrier Resort in White Sulphur Springs, WV. Regional awards will be presented at the regional business meetings on Wednesday, November 4, from 7:30 AM to 10:00 AM.

Please print a copy of this announcement for your file. NEAFCS requests that you not publicize your selection until after the official awards presentations are made in November. A press release will be provided on our website for your use after Annual Session. National awards will be displayed at Annual Session.

Your judging sheets will be available by September 1.

Again, congratulations on your award-winning application! I look forward to seeing you at the Greenbrier. Please contact me at [roxieb@uga.edu](mailto:roxieb@uga.edu) should you have any questions.

Very truly yours,

Roxie Price  
*NEAFCS Vice President for Awards & Recognition*

### **PIUKP Campus Recipe Testing**

Taste testing panels of 8-10 were recruited by the UK Food Systems Innovation Center. Panelists included FCS Extension agents as well as external taste testers. Each taste tester was provided with an iPad to complete evaluations for each recipe. Data was collected through Qualtrics and utilized by FCS agents in determining recipes to be further tested at the community level.



### **PIUKP Marketing – Engagement Throughout Kentucky**

Summer, 2016

Campus Kitchen at the University of Kentucky (CKUK)



CKUK is housed in the Department of Dietetics and Human Nutrition at the University of Kentucky. As such, the PIUKP project collaborates with CKUK and encourages use of PIUKP recipes in meal preparation, particularly with produce gleaned from the UK Horticulture Farm. During the Summer, 2016, dietetics senior Kendra Oo was the recipient of a Summer Research

Fellowship through the UK Office of Undergraduate Research. Her project involved gleaning produce and then using that gleaned produce in educational programming to local children participating in a summer program. When possible, Kendra included PIUKP recipes (e.g. Pumpkin Apple Muffins) as part of the recipes that were prepared and then served to the children. Kendra has presented her project at the Campus Kitchens Boot Camp in August 2016, at the Kentucky Posters at the Capital in February 2017, and at the Academy of Nutrition and Dietetics Annual Conference in October 2017.

Summer 2016      University of Kentucky Farmers Market (UK E.S. Good Barn)



A PIUKP booth with recipe cards, recipe samples, and other educational materials was set up weekly at the Farmer’s Market at the University of Kentucky. The recipes sampled included:

- June 8                      Blueberry Cream Cheese Pound Cake  
<https://fcs-hes.ca.uky.edu/recipe/blueberry-cream-cheese-pound-cake>
- June 15                    Zippy Zucchini Cakes  
<https://fcs-hes.ca.uky.edu/recipe/zippy-zucchini-cakes>
- June 22                    Big Blue Muffins  
<https://fcs-hes.ca.uky.edu/recipe/big-blue-muffins>
- Jun 29                      Sweet and Savory Cucumber Salad  
<https://fcs-hes.ca.uky.edu/recipe/sweet-and-savory-cucumber-salad>
- July 13                      Blackberry Lemon Upside Down Cake  
<https://fcs-hes.ca.uky.edu/recipe/blackberry-lemon-upside-down-cake>
- July 20                      Water Melon Tomato Salad  
<https://fcs-hes.ca.uky.edu/recipe/watermelon-tomato-salad>
- July 27                      Very Berry Salsa  
<https://fcs-hes.ca.uky.edu/recipe/very-berry-salsa>
- August 3                    Cucumber Corn and Bean Salsa  
<http://fcs-hes.ca.uky.edu/recipe/cucumber-corn-and-bean-salsa>
- August 10                  Broccoli Grape Pasta Salad  
<http://fcs-hes.ca.uky.edu/recipe/broccoli-grape-pasta-salad>

August, 2016      Kentucky State Fair



FCS Extension Agents provided educational materials and cooking demonstrations at the 2016 Kentucky State Fair. As well, the Big Blue Muffin was prepared for sampling at the Commodity Breakfast and recipe cards distributed.

### Television and Online Cooking Videos

The monthly televised cooking show “Plate It Up – Kentucky Proud” continues to air on Duo County Telecom with a possible viewing audience of 7,500 in a three county viewing area. The show airs every Sunday at 7:00 p.m. The show requires much planning, preparation and time to record, edit and produce. Nine segments of the televised program have been uploaded to YouTube and the internal PIUKP webpage to serve as reference videos for Family and Consumer Sciences Agents in Kentucky. Some 2,000 persons have been served PIUKP prepared dishes by Plain and Simple Catering and The Porch (locally-owned restaurant). The *Plate It Up! Kentucky Proud* Facebook page includes a significant collection of demonstration videos.



### Janet Johnson, Allen County (NCTV)

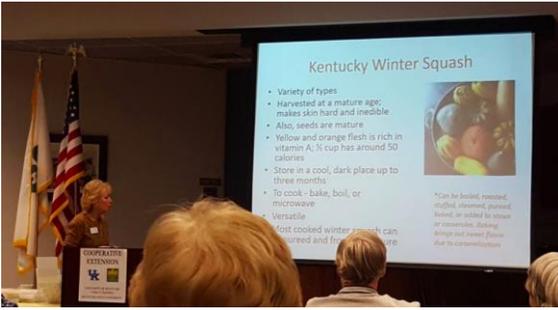


#### NCTV February 2015 Recipe

This month's featured recipe is a triple berry crisp. Janet Johnson also shows us how to make a very berry salsa.

YOUTUBE.COM

## Additional Photos from State-Wide PIUKP Programming



Kenton County



COOPERATIVE EXTENSION  
University of Kentucky  
College of Agriculture, Food and Environment

**Plate it up!**  
Kentucky Proud

**Priceless 16A**

October 13  
10 AM—Noon  
Pumpkin Apple Muffins

December 15  
10 AM—Noon  
Zippy Corn Chowder

**Wal-Mart**

October 17  
10 AM—Noon  
Fall Spiced Pumpkin Bread



Logan County

Martin County



Fayette County



Daviess County



Allen County



Green County



Fayette County



Taylor County

## Final Financial Report

A detailed accounting for items purchased, salaries charged to the program, and all other expenses of the grant are provided in an attached Excel file.

<b>GRANT FUNDS RECEIVED</b>	<b>\$50,000.00</b>
<b>GRANT FUND EXPENDED</b>	<b>\$50,000.00</b>
<b>TOTAL REMAINING</b>	<b>0.00</b>
<b>LINE ITEMS</b>	
<b>SALARIES/ WAGES</b>	\$13,004.71
<b>BENEFITS</b>	\$2,281.24
<b>TRAVEL</b>	\$830.24
<b>EQUIPMENT</b>	\$0.00
<b>SUPPLIES</b>	\$24,023.15
<b>CONTRACTUAL</b>	\$0.00
<b>OTHER</b>	\$5,863.00
<b>FACILITIES AND ADMIN</b>	\$3,997.66
<b>TOTAL</b>	<b>\$50,000.00</b>

## **Project 8: Working with community partners to promote specialty crops**

### **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 be 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

## Lessoned 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

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

## 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

<b>Equipment:</b>					
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/Freezer 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
<b>Supplies</b>					
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
<b>Contractual</b>					
Michelle Howell – marketing and branding (consultant) and project administration	\$5,000	\$5,000	\$5,000	\$5,000	\$10,000
<b>Other</b>					

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
<b>Total</b>	\$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
<b>2016</b>		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

				7	
5/6/2016	Inferno Equipment	blast chiller	1,500.00	21,669.57	equipment
5/5/2016	Vacuum Sealers Unlimited	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
<b>2017</b>					
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](http://ORGANICFACTS.COM)

[NEEDMOREACRES.COM](http://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](http://FRESHFORKIDS.COM)

[NEEDMOREACRES.COM](http://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*



HOTEL  
INC



bloom



#umafarmdinner





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 Nowell*



## *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





## 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.



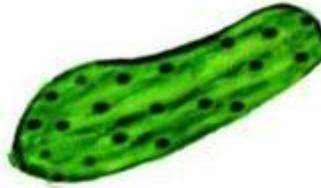
## PEPPERS



### 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/>