Indiana State Department of Agriculture
Agreement Number: 14-SCBG-IN-2018
Specialty Crop Block Grant Program 2015 Final Report
Date: 11/03/2017

Program Contact: Ann McCambridge
SCBG Program Coordinator
1 North Capitol
Suite 600
Indianapolis, IN 46204
317-419-0200
amccambridge@isda.in.gov

Contents:

Project Title: Growing Places Indy Urban Four-Season Specialty Crop Project

PROJECT SUMMARY

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.
Even at the peak of the growing season, Indianapolis residents struggle to gain access to fresh, sustainably grown specialty crops. GPI, in partnership with CLC, has made great strides over the last several years to increase access to specialty crops during the primary growing season through its micro-farming sites, farm stand, CSA, restaurant sales, grocery store sales, after school programs and cooking/nutrition classes.

However, during the winter, production of specialty crops and our efforts to serve our community are limited by the weather. By putting to use various season extension methods at CLC, including use of two existing heated greenhouses for microgreens and shoots production, and a new high tunnel and low tunnels, unheated for root crops and leafy greens, GPI has not only been able to increase production of, and access to, specialty crops in an urban environment, but has also helped build the health and educational opportunities available to residents. Along with expanding specialty crop production year-round, GPI expanded classes and workshops that educate community members about the possibilities for four-season growing in central Indiana.

Describe the importance and timeliness of the project.
Urban agriculture has moved from a trend to a foundational element of Indianapolis, and it is time to launch "next level" initiatives focused on specialty crop production. The time is ripe to help farmers, home gardeners and consumers see the possibilities of further growth in the specialty crop sector in Indianapolis and the role that specialty crops can play in the health of our community. By extending production to a four-season model and increasing learning opportunities for individuals, we are enhancing our ability to inspire individuals to "Grow well" and "Eat well." The end result – increasing consumption of these specialty crops – will further enable individuals to "Live well" and "Be well."

Although programs like matching SNAP-EBT dollars at farmers markets and the GPI farm stand have begun to help residents gain access to fresh, Indiana grown specialty crops, this project engaged the public in growing, cooking and eating specialty crops through youth programming, adult education classes, tours, volunteer opportunities, our farm stand and U-Pick farm year-round.

This project will highlighted the role urban agriculture can play in increasing specialty crop access, demand and consumption. Our continued growth at CLC serves as a model for other communities and organizations. In tours and consultations, we emphasize the importance of ensuring this increased access to locally grown specialty crops.

By increasing year-round production of diversified specialty crops in urban agriculture, GPI is better equipped to respond to increasing market demands for locally, sustainably grown specialty crops. Indianapolis has more than 10 separate for-profit and non-profit urban farms in operation for production. Nevertheless, the demand for specialty crops from urban farms exceeds the

supply. The most direct route for meeting this demand is for the urban farming sector to increase production throughout the year.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
In 2014, GPI received a SCBG to create a new 12,500 square foot diversified U-Pick farm at CLC. This four-season extension project greatly enhance the impact of this site by extending our specialty crop growing season and offering additional learning opportunities about season extension practices and urban agriculture through classes, workshops, volunteer activities and tours.

GPI is also built an outdoor education space at the U-Pick farm, giving us the infrastructure to host events and workshops throughout the year. GPI capitalized on an extended growing season and this infrastructure by offering additional classes, tours and workshops focused on season extension and growing and cooking specialty crops.

PROBLEMS OR DELAYS
No problems or delays.

GOALS AND OUTCOMES ACHIEVED

Describe the activities that were completed in order to achieve the performance goals and measurable outcomes identified in the approved project proposal or subsequent amendments.
Performance measure one: GPI kept keep record of the number of, type (e.g. apprenticeship, volunteer, class, tour, etc.) and participation rates in opportunities for educational experiences directly related to specialty crops made possible by the proposed season extension project at CLC in 2015.

Performance measure two: GPI kept keep record of all aspects of operating the CLC site using four-season production methods, including promotions, open hours and frequency, specialty crops grown, specialty crop sales, integration of the four-season growing model with specialty crop cooking/nutrition/gardening classes, etc., and offer tours/workshops to urban growers and other individuals/organizations interested in a four-season model for growing and selling specialty crops.

Performance measure three: GPI kept record of U-Pick and farm stand hours and frequency of operation, provided produce at the Indy Winter Farmers Markets, and tracked sales/distribution of specialty crops via U-Pick, farm stand, farmers market, restaurants and groceries by dollar amount and crop variety in 2015.

Performance measure four: GPI attempted to will keep weight records of 2015 specialty crop harvests but because of the many people involved in harvests a better measure was total sale of produce.

Performance measure five: GPI worked with Arsenal Tech high school students to attempt to establish their own growing, harvesting and selling of specialty crops.

Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.
Benchmark/Data Sources one: GPI compared 2015 engagement levels to 2014 engagement levels with a goal of a 25% increase.

Benchmark/Data Sources two: As the first four-season specialty crop urban farm in Indianapolis, no benchmark exists, and our research found no models in neighboring Midwest cities of similar size. GPI can only compare tour and workshop bookings to 2014 bookings but will monitor additional urban farms trained in four season growing as well as additional GPI staff focusing on four season production.

Benchmark/Data Source three: GPI compared 2015 specialty crop access and sales to 2014 records.

Benchmark/Data Source Four: GPI compared 2015 specialty crop production by sales to records of 2014 specialty crop production by sales.

Benchmark/Data Source Five: The goal was for students will begin tracking weight and price of specialty crops sold in 2015 to create a baseline production comparison but do to barriers of timing, availability and willingness of faculty, this piece could not be executed.

Highlight the major successful outcomes of the project in quantifiable terms.
Outcome one: GPI increased engagement in educational experiences by substantially more than the 25% goal with a 178% increase in workshop participation and 406% increase in tours. in 2015 and will be able to better assess interest levels among different demographics in the community**.**

Outcome two: GPI trained at total of ten other urban farms or gardens in year-round growing methods with the goal of two urban farms/gardens putting specialty crop season extension into practice and also have three GPI farming staff (two full-time, one part-time) working in high tunnel, year-round specialty crop production.

Outcome three: Between restaurant clients, U Pick, farm stand, CSA and farmers market vending, GPI recorded a 45% increase in total specialty crop consumption.

Outcome four: GPI recorded a 25% increase in specialty crop consumption in the winter months because of the season extension methods employed through this project as determined by the sale of produce.

Outcome five: Students at the STAR Academy Agricultural Magnet Program at ATHS experienced a 100%/complete knowledge gain in specialty crop production methods, specialty crop varieties and four-season growing methods**.** We worked with two students for the summer growing season who participated in nearly 30 harvests and more than 400 total hours of specialty crop production training.

If outcome measures were long term, summarize the progress that has been made towards achievement.
Outcomes were measured within this year alone so long term outcome measures are not relevant for this grant.

BENEFICIARIES

The number of beneficiaries who had a direct educational experience with us was that was grounded in four season growing was more than 400 people. We also had nearly 1,000 beneficiaries who had an indirect experience with us by shopping at our farm stand, attending our U Pick or picking up at CSA at the site. Furthermore, produce from the site was distributed and sold to more than 40 local restaurants and shops in Indianapolis. The smallest group of beneficiaries whom we believe this project impacted in the deepest way were the two high school students we worked with throughout the program.

Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.
GPI was able to host educational workshops, farm tours and volunteer activities at the site. In total, we worked with 450 individuals throughout the season who had a direct contact with the site that involved some type of hands on work. Furthermore, we were able to develop a relationship with Indianapolis Public Schools Agricultural Magnet (STAR Academy) and work intensively with two of their students throughout this project.

Clearly state the number of beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.
The number of beneficiaries who had a direct educational experience with us was that was grounded in four season growing was more than 400 people. We also had nearly 1,000 beneficiaries who had an indirect experience with us by shopping at our farm stand, attending our U Pick or picking up at CSA at the site. Furthermore, produce from the site was distributed and sold to more than 40 local restaurants and shops in Indianapolis. The smallest group of beneficiaries whom we believe this project impacted in the deepest way were the two high school students we worked with throughout the program.
Provide a comparison of actual accomplishments with the goals established for the reporting period.

This summary was completed above. The only goal we were not able to meet was to set up a more long term and independent production model for the agricultural magnet at Indianapolis Public Schools and this was largely due to the timing of our program, the availability of students outside the summer months being extremely limited and a lack of willingness by some key faculty to work with us.

LESSONS LEARNED

We believe the biggest lessons learned through this project were in the fact that four season growing in a small, urban farming model is a viable and potentially lucrative step for a small farming operation both in terms of income and in terms of educational experiences. In spite of

the potentially large infrastructure needs of such a step, the paybacks over time seem to be worth it for farms interested in focusing on specialty crop production in a year round model. Given grant support help we were able to trial a few new ideas and techniques but I believe even if we would have funded this completely on our own I still would have done it and I will recommend it to other farming operations as well.

CONTACT PERSON

Name: Tyler Henderson
Email: tylerhenders@yahoo.com

BUDGET

Total Funds Awarded	$34,630
Total Funds Expended	$34,630

ADDITIONAL INFORMATION

Not applicable.

Project Title: Breaking New Ground with Hops in Indiana

PROJECT SUMMARY

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.
The broad goal of this interdisciplinary project was to help facilitate expansion of the newly emerging Indiana hop industry. Indiana's hop industry has grown dramatically in the past few years; however, because it is a new crop to the region, there has been no research or outreach information to guide growers in development of best management practices. Consequently, this project was conducted to determine which pests are most problematic in Indiana, identify varieties, trellis systems and equipment that would optimize productivity, identify top research priorities, and connect growers and brewers through participatory networks.

Describe the importance and timeliness of the project.
Prior to 2010, hop production had not occurred in Indiana for over a century. In response to rapid growth in microbreweries and growing interest in sourcing local ingredients, the hop industry has grown by over 300% annually since 2011. We estimate that there are now at least 50 hop growers in the state and hop acreage continues to grow at a dramatic pace. These growers need recommendations for best varieties and pest management practices.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
Not applicable.

ACTIVITIES PERFORMED

*Briefly summarize activities and tasks performed during the entire grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Specifically, discuss the tasks provided in the **Work Plan** of the approved project proposal. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.*
The first objective of this project was to establish a hop advisory board to help direct and oversee our research and outreach efforts. This advisory board was established in early 2015 and consisted of hop growers, brewers and specialists at Purdue. We met three times during 2015, including just prior to our March workshop at the IN Small Farm Conference in Danville, IN, in July, just prior to our field day, and in October, after hop harvest had concluded. Informal surveys were developed and distributed to our board at each meeting to identify needs and gain feedback on our progress. The advisory was very helpful in refining our research approach and objectives.

The second objective of this project was to demonstrate how to contract and manage tall and dwarf trellis production systems in Indiana. To meet this objective, all of the activities and costs associated with constructing and managing these two production systems was carefully accounted for, in preparation for development of enterprise budgets. A hop list serve (growINhops) was established in early 2015, and a hop blog/twitter account was established in

spring 2015. Regular updates of our progress and challenges were reported through these outreach portals. Results of these efforts were also reported at our workshop, held at the IN Small Farm Conference in March 2015 in Danville, IN, and at our field day in July. Two national speakers, Dr. Heather Darby (UVT) and Dr. Charles Rowher (UMN), were brought in to present at our workshop at the small farm conference. Another workshop was held at the IN Small Farm Conference in March 2016, and Dr. David Gent (USDA-ARS OR) and Mr. Jason Perrault (hop grower in Toppenish, WA) were brought in to present at this workshop. Finally, an extension publication outlining the most problematic pests and control strategies was updated and handed out at the workshop, and made available on-line on our website. Results of our surveys indicated that participants learned as a result of attending our workshop and reading our publication.

The third objective of this project was to identify problematic insects and pathogens in Indiana hopyards. Hop plants in our research hopyard as well as hop yards around the state were scouted regularly throughout the 2015 and 2016 growing season to identify the most problematic pests. Samples were submitted to the Purdue Disease and Diagnostic Lab to confirm identification. A small greenhouse study was conducted during winter 2015-2016 to confirm the presence and virulence of a newly discovered pathogen that has not been reported to be a significant problem in hopyards in the PNW, but devastated our research hopyard. These results are now used to inform growers about the most problematic pests and efforts to develop the most effective and affordable control methods are underway.

The fourth objective of this project was to identify hop varieties that are adapted to Indiana's environmental conditions, perform well in dwarf trellis systems, and meet quality characteristics demanded by local craft brewers. Our research hop yard was carefully monitored throughout the 2015-growing season and data was collected for pest incidence, nutrient uptake and yield. Hop cones collected from our research hop yard, as well as commercial hop yards around the state were submitted to a commercial lab in Michigan to determine hop end-use quality characteristics. We also worked with the Food Science Department to develop a new in-house analytical testing lab for hop cone quality. Results of these activities were presented during our field day in July 2015 and at the workshop held in March 2016. We now have scientific evidence to suggest varieties that are best adapted to Indiana.

The fifth objective of this project was to identify scale-appropriate equipment that will support a robust, collaborative local hop industry. We worked with students in the Agriculture and Biological Engineering (ABE) Department to conduct an assessment of the size and scale of the Indiana hop industry. We also asked Dr. Darby (UVT) to discuss her research with scale-appropriate hop equipment at the workshop held in March 2015. The students in ABE identified mechanical harvest equipment for dwarf trellis systems as a need, and initiated construction of a small prototype. We now know where we need to focus further equipment efforts.

The sixth objective of this project was to facilitate further development of a collaborative network of hop growers, brewers and research and extension personnel to increase market opportunities and guide future research and outreach efforts, As part of these efforts, Ms. Cerruti attended a hop workshop held at the Great Lakes Vegetable Expo held in Grand Rapids, MI in December 2015, and Dr. Hoagland and Ms. Judith Martin (replaced Ms. Cerruti in January 2015) attended a meeting of the Great Lakes Hop Working Group held in Burlington, VT in April

2016. All project participants participated in the workshops held at the IN Small Farm Conference in 2015 and 2016, and were present during the field day in summer 2015. The list-serve and blog were updated and moderated to maintain active discussions. Attendance at the workshops and field day were recorded, and small informal surveys were used to collect information on needs and feedback on our efforts. Growers are now better connected and are collaborating routinely.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.
The project solely benefited hop production and hop growers, which is a specialty crop.

Present the significant contributions and role of project partners in the project.
Dr. Hoagland was intimately involved in all aspects of the project, from organizing and hosting the workshops and field days, supervising the technicians and undergraduate research interns, analyzing all results, and presenting information at workshops, field days, and national meetings. Ms. Cerruti (Hoagland lab technician) managed the field activities in our research hop yards and participated in hop scouting efforts along with Mr. Obermeyer (IPM Specialist), and Mr. Nevins and Ms. Martin (interns). Dr. Farkas (Food Science) led effort to establish the new analytical testing lab. Dr. Stwalley (ABE) supervised the students who conducted the survey and initiated construction of the dwarf trellis harvest unit.

If outcome measures were long term, summarize the progress that has been made towards achievement.
Not applicable.

Provide a comparison of actual accomplishments with the goals established for the reporting period.
With the exception of the publication of enterprise budgets based on our research hop yards, we were able to meet all of the goals expected for this project. Using surveys, we documented that participants learned about hop production at our workshops and field days, and through our blog and list-serve. Regular scouting in our research hop yard and hop yards throughout the state provided valuable information regarding the most significant pests in IN hop yards. We collected valuable data from our research hop yard that has helped us understand which varieties and production systems are most promising in IN. We determined where equipment needs are lacking and initiated construction of a prototype dwarf trellis harvest tool. We documented attendance at our outreach effects and conversations through our list-serve and blog.

Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.
Hops have not been commercially grown in over a century in Indiana, so there was little to no baseline data to use to establish our benchmarks. Consequently, we were able to meet our benchmarks and exceeded them in many cases. For example, we expected at least 25 people to attend our workshops, but we had over 100 in attendance. We identify many pests and gained valuable new data on the performance of many hop varieties in IN. We identified the most

needed scale-appropriate equipment and strengthened the network of hop growers and extension educators in IN.

Highlight the major successful outcomes of the project in quantifiable terms.

- Indiana hop growers have a formal alliance and meet regularly to discuss and overcome challenges.
- The major pests affecting Indiana hop production have been identified.
- Varieties that are best adapted to Indiana have been identified.
- Equipment needs for small-scale hop production in Indiana have been identified.
- Indiana growers have increased knowledge about how to install and operate a hop yard.
- Further research and outreach needs to optimize hop production in Indiana have been identified.

BENEFICIARIES

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

- Indiana Hop Growers Alliance and Indiana Brewer's Guild
- Purdue Extension Educators

Clearly state the number of beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

- Approximately 200 growers and 20 Purdue Extension educators benefited from the outreach components of our project.
- Preliminary economic assessments in neighboring states estimate that hops could have a net return of approximately $10,000 per acre, which is far more profitable than corn and soybeans, which dominate Indiana's agriculture sector. However, identifying the right varieties, trellis systems and equipment compliments, and understanding how to manage pests will be critical to obtaining these profits from hops. Therefore, a rough estimate of the potential economic impact of this project, would be that we increased the performance of hops by at least 25%, or $2500 per acre. Our current estimate is that there are at least 50 acres of hops being produced in Indiana, which would mean that the potential economic impact of our project was $125,000. However, as the industry continues to grow, we expect the benefit to continue to grow.

LESSONS LEARNED

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.

Hops are a labor-intensive crop and there are many pests that will be problematic in Indiana. Being successful in hop production will not only require extensive knowledge of best management practices, but it will also require strong collaborations with other growers and brewers to ensure markets are viable.

There is a lot of interest by growers in establishing new hop yards, but growers are advised to carefully consider all the time, costs and energy associated with this crop before establishing a hop yard.

Describe unexpected outcomes or results that were an effect of implementing this project.
Obtaining all the information needed to manage a perennial crop like hops is difficult in only one year. It's best to keep expectations small and prepare for a multiple year project to fully meet longer term goals.

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

Lessons learned should draw on positive experiences (i.e., good ideas that improve project efficiency or save money) and negative experiences (i.e., lessons learned about what did not go well and what needs to be changed).
A perennial crop like hops is expensive to establish and manage. Rather than building and managing a hopyard as a researcher, working collaboratively with growers to establish on-farm trials might be more economically feasible and have longer-term benefits.

FUTURE PROJECT PLANS
None to report at this time.

CONTACT PERSON
Name: Lori Hoagland
Telephone: 765-494-1426
Email: lhoagland@purdue.edu

BUDGET

Items:	**Paid:**	**Allotted:**
Salary	33,946.60	30,089.00
Consultants	3,236.72	0.00
Travel	6,243.94	12,528.00
Supplies	10,489.74	11,300.00
Total Awarded:	53,917.00	
Total Expended:	53,917.00	

ADDITIONAL INFORMATION
Link to our website
https://ag.purdue.edu/hla/Extension/Pages/Hops.aspx

Poster presented about our research
https://www.agriculture.purdue.edu/hla/Extension/Documents/2014_GrowINHops_posterNC1.pdf

Project Title: National Maple Syrup Festival

PROJECT SUMMARY

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.
Indiana has the potential to become the recognized leader in the national maple syrup industry. This project seeks to:

1. unify Indiana maple syrup producers and suppliers,
2. leverage the state's geographic position as the first place the sap flows each spring,
3. develop a brand that defines Indiana's maple syrup production – the history, stories, locations, methods, and peoples who have created, and are creating, syrup from trees on this land, and
4. include all of that as a component in establishing the National Maple Syrup Festival as a truly national festival, with a national identity celebrating all aspects of maple syrup production, with the specific goals to
    a. position Indiana's maple syrup producers as leaders in the production and promotion of this specialty crop, and
    b. give Indiana's maple syrup producers the organizational and collaborative platform to promote Hoosier-made syrup year-round, with the intent to increase their businesses through increased sales.

Describe the importance and timeliness of the project.
The project is important because Indiana has the maple syrup story to tell – from the Native Americans who tapped trees and made syrup here, to pioneer methods, to both the primitive and sophisticated processes used today in this land where the sap flows first – and a national brand can be built on that story. It's timely because in four years the Festival has developed roots and awareness, and Nashville/Brown County has agreed to become its new home. With its foundation and the resources of its new home, the Festival can mature to become one of Indiana's national assets – perhaps similar to the Indianapolis 500 in terms of positioning the state in the minds of the nation. Like no other tool, the Festival has the potential to organize Indiana's maple sap and syrup producers.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
We were able to use the foundation built from the previous years' festivals and grow the festival with new components. Sap School was added to teach those interested in the sugaring process how to get started as well as help hobbyist improve their skills. A variety of evaporator demonstrations were added to show the various ways syrup can be made. Sugaring for Small Folks was added to provide a safe and interactive way for children to learn about the sugaring process. Tap the Town was added for visitors to get a firsthand experience in tapping a tree and monitoring sap flow.

We engaged the Indiana Maple Syrup Association to assist with new activites and participate in annual Indiana Maple Weekends. Indiana Maple Weekend allowed people to visit the various sugar shacks throughout the state for a firsthand sap to bottle experience.

PROJECT APPROACH

Briefly summarize activities and tasks performed during the entire grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Specifically, discuss the tasks provided in the Work Plan of the approved project proposal. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.

The Festival Board was created and members where assigned task.

- The Director was charged with engaging the Indiana Maple Syrup Association (IMSA). It just so happened the president of the IMSA was also the president of the North American Maple Council (NAMC). This helped expand the scope of the festival into a national event by generating interest from the (NAMC). IMSA also provided insight on production, festival location, State Board of Health Seminar, and festival activities.
- We reached out to local and national producers, hosted a State Board of Health Forum and formed partnerships by offering to sell syrup on behalf of producers that could not attend the festival. This helped achieve the goal of collaborating with producers and providing the platform for an annual homecoming for producers.
- Meetings where held with Tim Burton, founder of the National Maple Syrup Festival, to share ideas and expand upon previous festivals. Mr. Burton continued the Sweet Victory Challenge, a recipe competition, in conjunction with the festival.
- The school corporation, local restaurants, artists and lodging properties where invited to a festival planning open house to solicit their involvement in the festival.
- We leveraged the Brown County brand to promote and grow the festival by implementing a comprehensive marketing and advertising campaign consisting of radio and newspaper ads, social media post, emails, press release distribution to local, regional, and national media outlets. We also hosted members of the media so they could attend the festival and WIBC, and Indianapolis based radio station, did a live remote from the festival.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.

The focus was on maple syrup

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

- Brown County State Park provided the venue, manpower, firewood, sap samples and interpretive hikes
- Indiana Maple Syrup Association and local hobbyist assisted with Sap School, evaporator demos, vendors, and marketing
- Brown County School Corporation provided students for sap collection for Tap the Town, volunteers to work at the festival and hosted a pancake breakfast
- Rawhide Ranch sponsored a chuck wagon offering samples of food made with maple syrup. They also provided branded souvenir serving board for the maple syrup flights.

GOALS AND OUTCOMES ACHIEVED

Describe the activities that were completed in order to achieve the performance goals and measurable outcomes identified in the approved project proposal or subsequent amendments.
To achieve our goals we advertised for and interviewed potential board members. Final selection was made by the Brown County Convention and Visitors Bureau Board of Directors. We collaborated with the Indiana Maple Syrup Association throughout the project to develop Indiana Maple Weekends and began establishing a brand for Indiana Maple Producers.

We implemented a comprehensive marketing and ad campaign, as well as adding new and innovative components to the festival in order to secure earned media, increase web traffic, festival attendance, walk in traffic and phones calls to the Visitors Center and to drive visitation to the state park.

If outcome measures were long term, summarize the progress that has been made towards achievement.
Not applicable.

Provide a comparison of actual accomplishments with the goals established for the reporting period.
The local organizing committee served as the Festival Board of Directors.
State wide collaboration with maple syrup producers resulted in the creation of an annual Indiana Maple Weekend, an Indian State Board of Health Forum and they supplied presenters for Sap School and evaporator demos.

In lieu of an Indiana maple sugar product brand, we created a new Indiana Maple Syrup Association logo and label for the bottles of syrup sold at the Indiana State Fair giving the product a consistent appearance.

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

Measure	2014 Baseline	2015	2016
Web traffic	28,876	39,059	37,984
VC Walk Ins	381	1,312	2,515
Phone Calls	843	900	978
IN Res Gate Fees	$2,495	$4,465	$6,448
Non Res Gate Fees	$427	$532	$819

Highlight the major successful outcomes of the project in quantifiable terms.

- We added 6 new festival components: Tap the Town, Maple on the Menu, Sap School, Maple Flights, Sugaring for Small Folks and the Maple Heist Challenge Course; 2 food trucks, a beer and wine garden featuring maple beverages and 40 vendors.
- We built a successful relationship with the Brown County School Corporation by enlisting the help of the Jr High Science class to collect and monitor sap collection for Tap the Town and the High School Student Council to host a pancake breakfast that netted $3,000 for the student council.

- We built a strong working relationship with the Indiana Maple Syrup Association to create a stronger brand, an annual Indiana Maple Weekend, Indiana State Board of Health Forum and provide educational support for Sap School and evaporator demonstrations.

BENEFICIARIES

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

- The Brown County State Park, Indiana's largest and most visited state park, opened in 1929
- Brown County School Corp, a school corporation with the purpose of providing a free, public education in grades pre-k through 12 for children in Brown County
- Indiana Maple Association, an organization of about 100 Hoosier maple syrup producers who make maple syrup available for all to enjoy
- Over 200 local businesses, hotels, restaurants by attracting visitors to the area during a month that generally has low visitor traffic.

Clearly state the number of beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

- The Brown County State Park had a 148% growth in March gate fees from 2014 to 2016.
- The School Corporation benefited through both educational opportunities and economically by engaging 120 students in Tap the Town and a pancake breakfast that netted $3,000
- 25 members of the Indiana Maple Syrup Association benefited by increasing traffic to their sugar shacks through Indiana Maple Weekends. 6 members were vendors during the festival where they all sold out of syrup.

LESSONS LEARNED

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.

There is a lot of interest in maple syrup production. With that comes the challenges of when to have the event. Festival goers want to have the full experience, from tapping the tree, seeing the sap flow and watching it boil into syrup. In order to provide that experience the event needs to take place during sap season. The challenges is producers are busy in their sugar shacks putting up syrup and that restricts their involvement in the festival.

Weather plays a big role. Not only anticipating if festival goers come will come out in bad weather, but will the sap be flowing. In 2015 there was snow on the ground and it was cold. The same weekend in 2016, it was sunny and 50 degrees. While this brings out festival goers, it also impacts the sap flow. Some are saying that the 2017 Indiana syrup season is already over as of February.

Creating programming for a 2 day event is a challenge. While the focus of the festival was on maple syrup, there was an interest in other demonstrations of heritage crafts such as making wooden bowls, tanning hides, and open fire cooking.

Year 2 the festival was held solely in the State Park. While it provided the opportunity to avoid the red tape of local ordinances and fees it created the need for shuttles due to lack of parking.

Describe unexpected outcomes or results that were an effect of implementing this project.
The involvement and enthusiasm generated from the School Corporation added a community feel to the festival. Students came out daily for a 2 week period to measure and log sap production and sugar content by tree. These logs were then shared with the Tap the Town participants.

The maple flight booth had a continuous line both days of the festival. The flights consisted of a festival branded souvenir serving board (see picture below) and syrup samples from 5 different states. Sample of the syrup increased syrup sales.

The interest in the interpretive hikes in 2015 resulted in adding more hikes in 2016. One hike in 2015 had over 100 participants

If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.
We learned from the Indiana Maple Syrup Association that their product was not entirely PRODUCED in Indiana, because there is not enough surplus product, it was clear there was no prospect of creating a statewide brand. Creating a collaborative, statewide enterprise under one brand only is doable if the producers desire that, and if there is product to do it with. Neither case exists in Indiana at present, so the issue is not branding, it's creating the producer base, and that was outside the scope of this project.

Lessons learned should draw on positive experiences (i.e., good ideas that improve project efficiency or save money) and negative experiences (i.e., lessons learned about what did not go well and what needs to be changed).
For future festivals I would recommend:

- Make sure you are aware of both state and local board of health requirements and licenses needed. Maple Syrup falls in a cloudy area.
- More interactive activities where added in year two. Festival goers liked the connection with producers and learning their stories and the variety of ways to produce syrup
- Charging admission was a topic of debate. While we did have some complain about the admission charge, once inside they were eager to spend $10 for a maple flight and other souvenirs. Family passes were key.
- March is a month people associate with maple syrup, but it is difficult to get producer involvement.
- People loved tasting the sap straight from the tree then being able to taste syrup. It was a full circle experience
- Tap the Town was held 2 weeks prior to the event. Participants were treated to a maple infused brunch, instruction on how to tap a tree and a brief introduction to the sugaring

process. Expanding on Tap the Town where they can return to make their own syrup would provide for a well-rounded experience.

CONTACT PERSON

Name: Jane Ellis
Number: 812-988-7303
Email: jellis@browncounty.com

BUDGET

Total Awarded:	$70,000.00
Total Expended:	$70,000.00

ADDITIONAL INFORMATION

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

See provided pictures below. (page 18)

.


MAPLE SYRUP TASTING

Project Title: Integrating Farm to School Educational Content into Classrooms

PROJECT SUMMARY

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

The purpose of this grant was to further work done on a specialty crop block grant awarded in 2014 to enhance educational training to Food Service Directors, and to expand the 2014 SCBG by increasing knowledge, awareness and healthy choices in children. We proposed to address the barriers and challenges identified during the 2014 interviews of food service directors through professional development education. The primary issues identified included safety, seasonality, and distribution constraints. We also planned to design a controlled experiment to investigate student fruit and vegetable consumption before, during, and after nutrition/farm to school education in the classroom. In order to facilitate classroom integration of nutrition/farm to school education we planned to provide professional development for teachers. Finally, we proposed to compare knowledge and purchasing choices of parents in the home before, during and after student education in the classroom in order to evaluate the impact of student education on parental choices. All efforts in this grant were solely devoted to fruits and vegetables, specialty crops in Indiana.

The original objectives of this project were to:

- Evaluate changes in behavior of school children in third grade who have participated in educational lessons on specialty crops for Farm to School activities
- Determine if children's increase in awareness and knowledge result in changes in family food purchase behavior
- Establish a full-day professional development training for teachers participating in this program by incorporating farm to school curriculum into the classroom
- Develop and deliver a two-hour training for Food Service Directors to be held at the Indiana State Nutrition Association Conference November 5-7, 2015. This training will be recorded and edited for distance delivery

Describe the importance and timeliness of the project.

The national farm to school movement is a rapidly growing model for introducing school children to local foods and farmers as well as increasing exposure to healthy food choices. Indiana formed an interest group in the spring of 2012 composed of producers, local chefs, school district food directors, food distributors, state employees from Departments of Health, Education and Agriculture, and Extension specialists in specialty crop marketing and production from Purdue University. This group (called the Indiana Farm to School Network; IFSN), with help from Specialty Crop Block funding has generated significant momentum in Indiana around Farm to School. In 2013, a farm to school workshop was held at the Indiana Horticultural Congress and a survey was generated to gauge interest and activity among school district food directors and specialty crop producers. The momentum has continued to build in Indiana in 2014 with individual interviews conducted with food service directors across Indiana regarding the opportunities and challenges for Farm to School. These interviews have revealed a significant opportunity for education and training of food service directors on a variety of topics as well as an eagerness to learn more. All information gathered through surveys and interviews and all marketing outreach addressed only fruit and vegetable education and consumption.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
This 2015 grant was to further work done on a specialty crop block grant awarded in 2014 to enhance educational training to Food Service Directors, and to expand the 2014 SCBG by increasing knowledge, awareness and healthy choices in children. We proposed to address the barriers and challenges identified during the 2014 interviews of food service directors through professional development education. The primary issues identified included safety, seasonality, and distribution constraints. The professional development program created in this 2015 SCBG for school system food service directors focused on these three areas.

PROJECT APPROACH

*Briefly summarize activities and tasks performed during the entire grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Specifically, discuss the tasks provided in the **Work Plan** of the approved project proposal. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.*
Nutrition lessons focusing on fruits and vegetables were developed to be used in second grade classrooms. The lessons provided activities to enhance knowledge of a variety of fruits and vegetables. In addition, tastings of fruits and vegetables were included. Half the participating classrooms were intervention classrooms, implementing the assessments, nutrition lessons, and lunchroom study (described below). Half the classrooms were control classrooms, implementing the assessments and participating in lunchroom study, but not the classroom nutrition lessons. At the same time, photos of student lunches were being taken to determine if classroom instruction had an impact on waste (or consumption) in the lunchroom.

A training session was held to prepare the five teachers who were implementing the intervention in their classrooms. During the training, teachers worked through the provided materials in order to understand the students' perspective. Teachers were also given $100 gift cards to either Walmart or Meijer for purchasing fresh fruits and vegetables for sampling in the classroom during the lessons.

Results were positive for the classroom study. Intervention fidelity was high. During the six-week session, teachers reported delivering two lessons per week (M=2.00, SD=.11). Lessons were approximately 15-20 minutes in length – which was the planned duration of lessons. Teachers reported they implemented lessons as given (M=3.65, SD=.42; 4-point scale). Teachers also reported that students were engaged and enjoyed the lessons (M=3.56, SD=.46, M=3.57, SD=.58, respectively, on a 4-point scale).

Pre/post-survey results were also positive. When controlling for pre-nutrition survey score, age, gender, ethnicity, and parent education, children in the intervention condition demonstrated significantly higher scores on the nutrition and health survey compared to children in the control condition ($\beta = .47$, $p = .001$, Effect Size $g = 1.11$). Also, when controlling for the pre-survey fruit and vegetable preferences, age, gender, ethnicity, and parent education, children who received the intervention showed greater preference for fruits and vegetables during the post-survey than children who did not receive the nutrition lessons ($\beta = .19$, $p = .003$; Effect Size $g = .39$).

Results were neutral for the lunchroom portion of the study. We conducted linear regression and controlled for various demographic and socio-economic characteristics of students as well as school environment to estimate the effect of school nutrition education on the choice and consumption of fruits and vegetables by elementary school students in the lunchroom. Results suggested that the nutrition education lessons did not have a statistically significant effect on the choice and consumption of fruits and vegetables of elementary school students in the school lunch rooms.

In addition to the classroom educational program, we conducted training with school Food Service Directors during the annual Indiana School Nutrition Conference held November 5-7, 2015. Based on information from the 2014 Specialty Crop Block Grant, we determined barriers to Farm to School activities in Indiana. We developed a training to ameliorate those barriers. 80-100 Food Service Directors attended the training. It was standing-room-only during the session. They gave very positive feedback.

We were unable to complete Goal #3: Determine if children's increase in awareness and knowledge result in changes in family food purchase behavior. Dr. Jennifer Dennis, and expert in the agricultural marketing of specialty crops was lead on this section of the project. We were to deploy a parent survey culling information about parents' fruit and vegetable shopping habits before, during, and after the nutrition lessons in the classroom. Dr. Dennis left the university before the survey was complete. We did not have the expertise to develop or implement the survey. Evaluation specialists at Purdue met with us and determined the small number of lessons (2 per week for 6 weeks) could not be considered as correlated or causal factors to parent shopping patterns. We chose to discontinue this portion of the study.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.
The project did not benefit commodities other than specialty crops.

Present the significant contributions and role of project partners in the project.
The Indiana Farm to School Network (IFSN), particularly Maggie Stephon Schabel (IFSN), Sarah Kenworthy (Indiana Department of Education) and Laura Hormuth (Indiana Department of Health) provided support by ensuring an instructional session during the Indiana School Nutrition Conference. They also provided support during the Indiana Horticultural Congress by allowing us to present during their block session. Purdue Extension, Wea Creek Orchard, This Old Farm, and Green Bean Delivery supported the project by helping advertise the project to local schools to help in recruiting efforts.

GOALS AND OUTCOMES ACHIEVED

Describe the activities that were completed in order to achieve the performance goals and measurable outcomes identified in the approved project proposal or subsequent amendments.

Goal 1: Evaluate changes in behavior of school children in third grade who have participated in educational lessons on specialty crops for Farm to School activities

Initially, we had a great deal of push-back from schools about third grade participation, so we asked for, and received, permission from ISDA to switch to second grade. The push-back centered around third grade taking state standardized tests for the first time and needing all possible class time to prepare students. Second grade teachers were more willing to participate, and school administrators were more willing to let them. With the help of Purdue Extension, we recruited three schools comprising ten second grade classrooms. We randomly selected half the classrooms at each school to be intervention classrooms (i.e., children received the classroom curriculum), with the remaining half to be control classrooms (i.e., children did not receive the classroom curriculum). There were six total classrooms at Pleasant View Elementary School in Yorktown, IN, two total classrooms at St. Christopher Elementary School in Speedway, IN, and two total classrooms at Otterbein Elementary School in Otterbein, IN. This gave us a total of ten classrooms for the study. After sending home parent consent forms for students to participate, we had a total of 157 students participating in the study. This comprised intervention and control students.

Data Collection for Classroom Intervention

Prior to intervention implementation, all teachers assigned to the intervention group attended a 3-hour training workshop for the nutrition/farm to school curriculum. Teachers assigned to the control group did not participate in these activities. Following teacher training, pre-test data collection occurred. Participating children in both the intervention and control classrooms completed a short survey on health and nutrition knowledge during normal class time. Teachers also administered a direct assessment of children's fruit and vegetable preferences. Following pre-test data collection, teachers who had been trained on the curriculum implemented the nutrition/farm to school curriculum over the course of 6-weeks in their classrooms. The curriculum consisted of two, 15-20-minute lessons/activities per week. Lessons/activities focused on nutrition and healthy lifestyles. Teachers reported on dosage and adherence of intervention implementation on a weekly basis. When the 6-week curriculum was complete, participating children in the intervention and control groups completed the same survey on health and nutrition knowledge and direct assessment on fruit and vegetable preferences as they did for pre-test.

Data Collection for Fruit and Vegetable Consumption in the Lunchroom

Data collection was conducted in three Indiana elementary schools during the Fall 2016 semester. It involved ten second-grade classrooms where five classrooms were randomly assigned to the control and the remaining five as treatment (intervention) groups. At the beginning of lunch, pictures of students' lunch trays were taken to record their choice of food including vegetables and fruits. Immediately after lunch, pictures again were taken of students' trays to register the amount of food wasted (or consumed). Each student's pre- and post-lunch pictures were recorded twice a week for a total of ten weeks; two weeks prior, six weeks during; and two weeks post-intervention. For validating this photograph method, a random sample of trays were physically weighed before and after the lunch.

The collected lunchroom data (photographs) was quantified by employing the plate-level food-waste data visual estimation method used extensively in the nutrition literature. The photograph method involves measuring consumption (or waste) in 25% increments. The method yields both the amount by food chosen on the plate and the percentage of food wasted (or consumed). For analysis, there are two outcome variables 1) amount of fruits and vegetables students chose to place on their trays; 2) amount of fruits and vegetables wasted, which corresponds to the amount of actual fruits and vegetables consumed.

Classroom Intervention Results

Implementation fidelity results. Overall, intervention implementation fidelity was high. On average, over the course of 6 weeks, teachers reported delivering two lessons per week (M = 2.00, SD = .11) that lasted approximately 15-20 minutes each, which was the targeted duration and dosage. Teachers also indicated that, on average, they implemented the lessons as intended (M = 3.65, SD = .42; 4-point scale). Finally, teachers reported that children were engaged in and enjoyed the lessons (M = 3.56, SD = .46, M = 3.57, SD = .58, respectively, on a 4-point scale).

Child outcome results: nutrition knowledge and fruit and vegetable preferences. Data analyses were conducted using Stata 13.0 (StataCorp, 2013). All outcome data were analyzed for normality using skewness and kurtosis checks. Preliminary analyses, including t tests, were conducted to explore differences in outcome scores between the intervention and control children. Data were multilevel, with randomization occurring at the classroom level and child-level data being the unit of analysis. Intra-class correlations representing classroom variance in outcomes were .51 for the nutrition knowledge survey and .02 for the food preferences assessment. To account for this variance, multivariate regression analyses that used the generalized Huber-White sandwich estimator to adjust standard errors for non-independence (clustering by classroom) were conducted. Separate models were run for each outcome. Models included the following covariates: pre-test scores, age, gender, ethnicity, and parent education. Statistical significance was determined using an alpha level of .05. There was very little missing data (<1% for nutrition knowledge, and <2% for food preferences); however, full information maximum likelihood was employed to handle missing data. Results indicated that when controlling for the pre-test nutrition survey score, age, gender, ethnicity, and parent education, children in the intervention condition demonstrated significantly higher scores on the nutrition and health survey compared to children in the control condition (β = .47, p = .001, Effect Size g = 1.11). Similarly, results suggested that when controlling for the pre-test fruit and vegetable preferences, age, gender, ethnicity, and parent education, children who received the intervention showed greater preferences for fruits and vegetables at post-test than children who did not receive the intervention (β = .19, p = .003; Effect Size g = .39).

Goal: Students in the classroom will increase knowledge of seasonality, safety, and healthy food choices; increase knowledge of varieties of fruits and vegetables

Benchmark/Measure: Pre/post-test given at beginning of the intervention instruction, at the end of the intervention instruction, and 6 weeks post intervention instruction

Target/Change: An increase of 25% from pre-test to post-test with maintenance of scores on 6 weeks post-instruction test

Outcomes: We saw a statistically significant increase in both students' knowledge of seasonality, safety, and healthy food choices and knowledge of fruit and vegetable varieties. Results indicated that when controlling for the pre-test nutrition survey score, age, gender, ethnicity, and parent education, children in the intervention condition demonstrated significantly higher scores on the nutrition and health survey compared to children in the control condition ($\beta = .47$, $p = .001$, Effect Size $g = 1.11$). Similarly, results suggested that when controlling for the pre-test fruit and vegetable preferences, age, gender, ethnicity, and parent education, children who received the intervention showed greater preferences for fruits and vegetables at post-test than children who did not receive the intervention ($\beta = .19$, $p = .003$; Effect Size $g = .39$). It was very clear from pre/post-test data that students increased their preferences for fruits and vegetables during the study. We did not do a 6-week post intervention test.

Fruit and Vegetable Consumption in the Lunchroom Results. We collected 2065 digital tray lunch pictures from the three intervention schools. These were further used to extract food waste data and construct quantitative variables for choice and consumption of fruits and vegetables. We conducted linear regression models and controlled for various demographic and socio-economic characteristics of students as well as school environment to estimate the effect of the classroom curriculum on the choice and consumption of fruits and vegetables by elementary school students in lunch rooms. Results suggested that the classroom lessons did not have a statistically significant effect on the choice and consumption of fruits and vegetables of elementary school students in the school lunch rooms. It is possible these results stem from the disconnect between fruits and vegetables sampled in the classroom and those provided in the lunchroom. No effort was made to provide continuity between samples.

Goal: Students in the lunchroom will increase selection of fruits and vegetables in the lunchroom

Benchmark/Measure: Tick sheet of fruit and vegetable choices

Target/Change: An increase of 20% selection of fruits and vegetables over the baseline

Outcomes: After Dr. Jennifer Dennis left the study, new faculty became part of the study. It was determined that a stronger study would be to examine food consumption/waste rather than just choice. Students may choose a fruit or vegetable but not eat it. In the revised plan, students' food trays were analyzed for food waste/consumption of fruits and vegetables. We collected 2065 digital tray lunch pictures from the three intervention schools. These were further used to extract food waste data and construct quantitative variables for choice and consumption of fruits and vegetables. We conducted linear regression models and controlled for various demographic and socio-economic characteristics of students as well as school environment to estimate the effect of the classroom curriculum on the choice and consumption of fruits and vegetables by elementary school students in lunch rooms. Results suggested that the classroom lessons did not have a statistically significant effect on the choice and consumption of fruits and vegetables of elementary school students in the school lunch rooms. It is possible these results stem from the disconnect between fruits and vegetables sampled in the classroom and those provided in the lunchroom. No effort was made to provide continuity between samples.

Goal 2: Establish a full-day professional development training for teachers participating in this program by incorporating farm to school curriculum into the classroom

Three third grade teachers were hired to assist in the development of the nutrition/farm to school curriculum for the classroom. During a one-day workshop and using the MyPlate curricula, Two-Bite Club and A Rainbow on My Plate programming, and original ideas from the teachers, a two-day per week curriculum was planned to span a six-week timeframe. The overarching themes were helping students choose healthier options, exposing them to new, healthy foods, and teaching them some of the health benefits of fruits and vegetables in their diets. Fruits and vegetables were grouped into color themes with students trying new fruits and vegetables each week from the color featured that week. For example, one week was the red week. Students sampled a variety of fruits and vegetables that were red: pomegranates, red peppers, red cabbage, strawberries, etc. They learned the health benefits of the red fruits and vegetables, and were encouraged to eat them at home. The curriculum culminated in a class activity. Classrooms could select one:

- developing a farmers' market where students explained to purchasers the health benefits of the fruits and vegetables they were buying
- developing "Eat the Rainbow" posters for the cafeteria with fruits and vegetables – also explaining the health benefits of each fruit and vegetable
- making commercials for fruits and vegetables to be announced on the school daily announcements; the commercials highlight the benefits of eating those fruits and vegetables

After the curriculum was developed by the third-grade teachers, typed into a cohesive format, and prepared for presentation, the recruited second grade teachers who were randomly selected for the intervention came to a training on how to use the curriculum. Walking through the program, examining each piece and activity, they experienced the curriculum (minus the tastings) as the students would. This helped them know what the students would experience. They were prepared to teach the six-week curriculum following the training. As a test of fidelity, teachers were asked to submit a short survey each week asking how long it took them to teach each lesson, if they deviated from the lesson plans at all, and how the students liked the lessons. They were also encouraged to give us any feedback – positive or negative – about the program.

Goal: Teachers will increase knowledge of Farm to School and seasonality, food safety, and healthy food choices

Benchmark/Measure: Pre/post-test given at summer 2015 professional development for teachers

Target/Change: An increase of 25% from pre-test to post-test

Outcomes: We did not provide pre/post-tests for the teachers during their professional development. Curriculum was taught as if they were student participants to give them the students' perspective on the program. Based on discussions during the professional development and the fidelity of implementation sheets, we believe teachers understood the curriculum content very well.

Goal 3: Determine if children's increase in awareness and knowledge result in changes in family food purchase behavior

Dr. Jennifer Dennis is an expert on agricultural marketing, specifically of specialty crops. She left the project before the family survey of purchase behavior was completed. After she left the project, we did not have the expertise to effectively develop or complete the survey. After meeting with evaluation specialists at Purdue to help us complete the survey, they determined the small number of nutrition lessons per week (two per week for six weeks) in our study could not be ruled as a correlated or causal factor for changes in family purchasing. There were too many confounding factors. We therefore decided to leave family food purchase behavior out of the study.

Goal: Parents/Guardians at Home will increase purchase of fruits and vegetables at the grocery or market

Benchmark/Measure: Survey given before intervention, during intervention, and post intervention

Target/Change: A 10% increase of grocery dollars spent on fruits and vegetables

Outcomes: Dr. Jennifer Dennis is an expert on agricultural marketing, specifically of specialty crops. She left the project before the family survey of purchase behavior was completed. After she left the project, we did not have the expertise to effectively develop or complete the survey. After meeting with evaluation specialists at Purdue to help us complete the survey, they determined the small number of nutrition lessons per week (two per week for six weeks) in our study could not be ruled as a correlated or causal factor for changes in family purchasing. There were too many confounding factors. We therefore decided to leave family food purchase behavior out of the study.

Goal 4: Develop and deliver a two-hour training for Food Service Directors to be held at the Indiana State Nutrition Association Conference November 5-7, 2015. This training will be recorded for distance delivery.

The goals and efforts of the 2015 SCBG built off the findings and efforts of the 2014 SCBG, "Enhancing Indiana's Specialty Crop Market through a Targeted Farm to School Effort." Individual interviews with food service directors across Indiana regarding the opportunities and challenges of Farm to School revealed a significant opportunity for education and training of food service directors on a variety of topics. Specifically, food service directors consistently expressed concern regarding safety, seasonality, and managing multiple suppliers of local foods as barriers to participation in Farm to School. Additionally, a lack of awareness of regulatory requirements for local producers and resources on the topic seemed to decrease food service directors' confidence in procuring local foods. The specific challenges identified through the interviews provided an opportunity to enhance educational training for food service directors. We built upon the findings of the 2014 SCBG by providing training/professional development addressing these barriers and challenges identified, specifically managing multiple suppliers, regulatory requirements, resources, and safety.

Initially, we planned to deliver a two-hour training with a pre/post-knowledge assessment at the Indiana State Nutrition Association Conference. However, sessions at the conference were 90 minutes in length. We therefore decided to eliminate the pre/post-knowledge assessments in order to have time for the full educational component of the program. Due to equipment issues at the conference, we did not record the presentation for distance delivery. However, approximately 80-100 conference-goers attended the training. There was standing room only in the session, so the training reached a great number of participants.

Goal: Food Service Directors would increase understanding of solutions to seasonality/safety issues with Farm to School

Benchmark/Measure: Pre/post-test given at the Indiana Food Service Directors' Annual Meeting in October 2015

Target/Change: An increase of 15% from pre-test to post-test scores

Outcomes: Initially, we planned to deliver a two-hour training with a pre/post-knowledge assessment at the Indiana State Nutrition Association Conference. However, sessions at the conference were 90 minutes in length. We therefore decided to eliminate the pre/post-knowledge assessments in order to have time for the full educational component of the program. Due to equipment issues at the conference, we did not record the presentation for distance delivery. However, approximately 80-100 conference-goers attended the training. There was standing room only in the session, so the training reached a great number of participants.

BENEFICIARIES

Students: Approximately 120 second grade students were exposed to nutrition lessons in the classroom and 157 participated in the lunchroom evaluations.
Teachers: Ten teachers participated in the project. Five received training for and implemented nutrition lessons, including assessments, in the classroom. Five acted as control classrooms by giving assessments, but no nutrition lessons.
Food Service Directors: Eighty to one hundred Food Service Directors participated in the training held at the Indiana State Nutrition Association Conference in November 2015.

LESSONS LEARNED

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.

- We gained insight into planning out protocols more thoroughly prior to submission. There were numerous changes that had to be made during implementation as we more adequately developed our research plan.
- It was unexpected to have no results on the lunchroom portion of the study. We believed that nutrition lessons in the classroom would influence student choice in the lunchroom. However, based on our study, it did not. We were unable to correlate what was being served in the lunchroom with what students were sampling in the

classroom. With such a brief intervention period, it would have been more impactful to correlate classroom and lunchroom fruits and vegetables

- We learned that brief, regular nutrition instruction in the classroom changes fruit and vegetable preferences for the better; fifteen minute lessons done two times per week were enough to effect change

Describe unexpected outcomes or results that were an effect of implementing this project.
We did not expect to find no results on the lunchroom study. We believed that classroom instruction, particularly with tastings of fruits and vegetables, would have an impact on choice and consumption in the lunchroom.

If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.
Perhaps a stronger connection between the classroom and the lunchroom would have benefited the study outcome. If students were receiving peaches in the lunchroom, we should have been tasting peaches in the classroom. We did not necessarily connect classroom tastings to what was being served in the lunchroom. The connection might have made a difference.

Lessons learned should draw on positive experiences (i.e., good ideas that improve project efficiency or save money) and negative experiences (i.e., lessons learned about what did not go well and what needs to be changed).

- The PI left the study at the very beginning of the grant period, which meant regrouping to determine what could be done with the people in place.
- We found that the idea of the parent survey was not statistically sound and should not be attempted.
- We determined to connect what was wasted (consumed) in the lunchroom to what was happening in the classroom. (Originally the study only examined what students' chose. We found that many elementary students have no choice regarding the plate lunch.)
- All these events determined a different approach for our program. While we believe the project became stronger than the one originally written, it has been difficult to maneuver all the changes. ISDA funded a project and have had to work the multiple changes. The lesson we learned is to be well prepared when writing the original proposal and have a secure knowledge that your proposed project is feasible and uses the best methods.

CONTACT PERSON
Tamara Benjamin
(765) 496-1930
tamara17@purdue.edu

BUDGET

Items:	**Paid:**	**Allotted:**
Salary (no fringes)	$60,073.65	$60,442.26
Stipends	$3,000	$3,000
Consultants	$2,035.45	$1,500

Travel	$2,750.55	$2,750.55
Supplies & Expenses	$1,631.74	$2,167.19
Total Awarded:	**$69,860**	
Total Expended:	**$69,491.39**	

ADDITIONAL INFORMATION - *N/A*

Project Title: Purdue – Food Safety Ed Audits

PROJECT SUMMARY

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.
Demand for Indiana-produced fresh fruits and vegetables is increasing. In order to meet wholesale buyer requirements, comply with state and local regulations, and provide wholesome food to consumers, growers must implement Good Agricultural Practices (GAPs) for food safety. Indiana fresh fruit and vegetable producers need education about food safety practices, assistance implementing them on their farms and meeting requirements of food safety auditors, and financial assistance to reduce cost of food safety audits. If these issues are not addressed, growers will be shut out of many marketing opportunities and the industry will decline. Furthermore, if growers do not follow food safety practices, the risk of foodborne illness increases with attendant costs to individual, society and the industry.

Describe the importance and timeliness of the project.
Buyer and government requirements for documented food safety practices are increasing at the same time as demand for Indiana-grown fruits and vegetables is increasing. Unless and until growers meet these demands they will not be able to sell products to markets such as restaurants, grocery stores, schools, and hospitals. If these issues are not addressed, growers will be shut out of many marketing opportunities and the industry will decline. Furthermore, if growers do not follow food safety practices, the risk of foodborne illness increases with attendant costs to individual, society and the industry.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
This project builds on work previously funded by the Specialty Crop Block Grant Program (Food Safety for Fresh Fruits and Vegetables, 12-25-B-1067, grant to Purdue). Educational resources about on-farm practices for produce safety used in that project are adapted and used in shorter trainings oriented towards small-scale direct marketers. Larger scale operators who have already received training are assisted in implementing food safety through individual consultations and in obtaining a third-party food safety audit through cost-sharing. The cost to growers of new federally-required training is partially offset by grant funds. Ideas for improving food safety services available to farmers generated as awareness about food safety has increased are professionally evaluated by an outside consultant. This project also builds on work conducted by Illiana Watermelon Association (IWA) that was funded by a previous Specialty Crop Block Grant. In that project, IWA provided a cost-subsidized food safety workshop exclusively for members conducted by a nationally-known third party audit company. This project further assists IWA members in obtaining food safety audits by offsetting the audit cost.

PROJECT APPROACH

Briefly summarize activities and tasks performed during the entire grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Specifically, discuss the tasks provided in the ***Work Plan*** *of the approved project proposal. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.*
J. Scott Monroe, Purdue Extension educator, was assigned duties of Food Safety Extension Specialist for this project.

The food safety educator paid by this project worked with others to develop the On-Farm Food Safety for Produce Direct Marketers curriculum, train Extension educators to teach it, and offer the program around the state. Curriculum materials include: 1) an electronic slide presentation; 2) a handout on water testing; 3) additional handout resources; 4) instructions for hosts and presenters; 4) presenter training video; 5) on-site evaluation; 6) post-growing season evaluation (2016 only). Water test kits were distributed as part of the program in 2016. The program has been offered in 30 counties to 342 participants. Due to the success of the program there are plans for Purdue Extension to publish the slides and script and a system will be developed to continue offering the program.

The educator also provided training and consulting on writing food safety plans, assisted with scheduling of consultants on farms, published articles in Extension newsletters and food safety blog, and created an update module for the Purdue online GAPs course.

The initial proposal for this project included offering the Produce Safety Alliance GAPS curriculum. That curriculum and trained trainers were not available until the very end of this project. Once it was possible, the educator worked with others who had taken responsibility for offering the curriculum to present 6 trainings that were partially supported by this grant, reaching 101 people.

Food safety consultants were contracted to work with individual farmers either at their farms, over the phone, or at an educational event. There were 4 on-farm consultations, one via phone, and two at an educational program. Feedback suggested some found it extremely valuable, but participation in this opportunity was low, cost was high, and identifying and contracting with consultants was time consuming.

Food Safety Audit Cost-share programs were offered in 2015 and 2016 by Illiana Watermelon Association to its members, and by Purdue University to any Indiana produce farmer. IWA reimbursed 27 operations for audits performed in 2015 and 14 operations for audits performed in 2016. Seven operations participated in the Purdue cost-share.

New Venture Advisors was contracted to investigate the feasibility of a local food safety audit venture. They conducted background research and phone interviews, and organized a stakeholder meeting. The meeting brought together groups that had not previously convened to discuss produce safety topics. Their report concluded with four strategic recommendations: 1) increase the number of auditors in Indiana, 2) explore the potential of a group audit program, 3) pursue opportunities to shape changes to existing audit standards, and 4) (beyond scope of the study) further explore the potential to expand, improve, and better market food safety training and support services for producers. 1 SEP

The Food Safety Website at ag.purdue.edu/hla/foodsafety was maintained and articles were written for the blog.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.
This project did not benefit commodities other than specialty crops.

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

Purdue University: Co-PI's at Purdue managed the project and served as project director and food safety education specialist; Purdue staff listed as key personnel and other staff developed materials and delivered educational programs.

Illiana Watermelon Association managed the food safety audit cost-share program for their members.

GOALS AND OUTCOMES ACHIEVED

Describe the activities that were completed in order to achieve the performance goals and measurable outcomes identified in the approved project proposal or subsequent amendments.
Goal 1: Fruit and vegetable producers obtain documentation to sell to buyers or markets they couldn't previously.
Activity: Produce Safety Alliance curriculum was delivered in 6 counties in 2017 and GAPs A to Z training was provided in 2016.
Performance Measures:

1. Number of individuals who obtain documentation of GAPs training required by FSMA requirements or ISDH.
    a. Benchmark: Number when proposal submitted = 0 have obtained documentation required by FSMA and 700 have obtained GAPs A to Z training required by ISDH.
    b. Target: (revised 11/2/2016) 70 obtain documentation required by FSMA or ISDH
    c. Progress: 101 have obtained FSMA-required training; 35 have obtained GAPs A to Z training.
2. Number of operations that pass a specific 3rd party food safety audit for the first time.
    a. Benchmark: 37 operations passed a 3rd party audit in 2014 (info from audit sites).
    b. Target: 45 operations pass a food safety audit not previously passed.
    c. Progress: 46 operations passed a 3rd party audit in 2016 (info from audit sites).

Goal 2: Fruit and vegetable producers who sell direct to consumers at farmers markets improve practices for food safety.
Activity: The curriculum 'On-Farm Food Safety for Direct Marketers' was developed, trainers were trained, and it was delivered in 30 Indiana counties. As part of the trainings, attendees were offered a free microbiological test of a water source used in their produce operations.
Performance Measures:

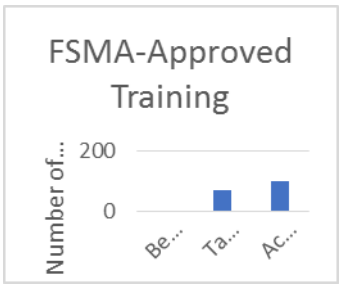
1. Number and percentage of direct-sales operations that self-report improved practices after attending educational program.
    a. Benchmark: Unknown.
    b. Target: 150 (75%) report improved practices.
    c. Progress: The educational program was delivered to 342 people. Forty-one responses were received for a post-season survey sent to 204 participants in 2016. 58% of those respondents reported improving food safety practices on their farm. Surveys were also distributed the day of the program. 85% of respondents (145/169) anticipated making improvements after attending a program.
2. Number and percentage of direct-sales operations that test water for microbial quality after attending an educational program.
    a. Benchmark: Number that had tested water in year prior to attending program equaled 41% (17) of respondents to the post-season survey.
    b. Target: (revised 11/2/2016): 10% of operations get water tested.

c. Progress: Of 161 water test kits distributed, 17 were submitted for testing.

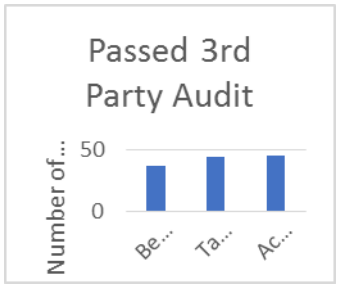
If outcome measures were long term, summarize the progress that has been made towards achievement.
Not applicable.

Provide a comparison of actual accomplishments with the goals established for the reporting period.
This is the final report for this project. We have exceeded our revised goal of 70 operations obtaining FSMA-approved training: 101 have received the training (Fig. 1A). We exceeded our goal of 45 operations passing a new 3rd party food safety audit: 37 operations had passed audits at the start of the project and 46 had passed audits by the end of the project (Fig. 1B). We could not track for certain whether all of the 46 are 'new' audits, but audit requirements have changed since the project began, and it is likely that many represent new audit specifications. We estimate that 198 direct-market operations improved their food safety practices, representing 58% of attendees–based on extrapolation from the post-season surveys that were returned by 20% of program attendees in 2016 (Figs. 1C and D). This exceeds our goal of 150 operations, but does not meet our goal of 75%. Responses to surveys returned the day of the event indicated that more than 85% plan to make an improvement, so given more time there may be more operations that actually make improvements. We met our revised goal that 10% of operations would get their water tested: of 161 test kits distributed, 17 were submitted for testing, or about 10% (Fig. 1E and F). Test kits were not distributed to attendees who use only potable public water sources for their produce operation. We estimate that 66 direct-market operations had tested their water in the year prior to attending the program, representing 41% of attendees who received water test kits– based on extrapolation from the post-season surveys that were returned by 20% of program attendees in 2016.

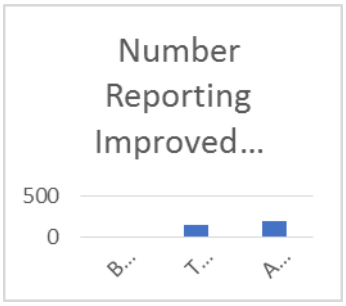
Clearly convey completion of achieving outcomes by illustrating baseline data that has been gathered to date and showing the progress toward achieving set targets.
Figure 1. Benchmark, target, and achieved values for measurable outcomes. A. Number of operations receiving FSMA-approved training. B. Number of operations passing a 3rd party food safety audit. C. Number of direct-marketers reporting improved food safety practices. D. Percent of direct-marketers who attended training reporting improved food safety practices. E. Number of direct-market operation that had water tested for microbial quality. F. Percent of direct-market operations given a water test kit that submitted the kit to a testing lab. See text for details.



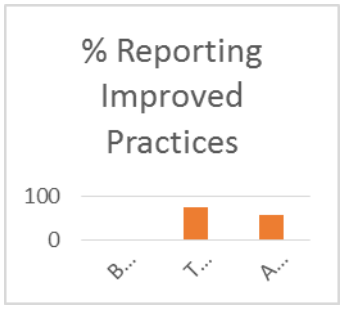
A.



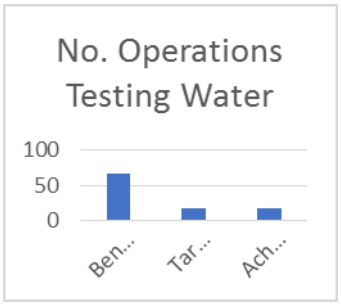
B.



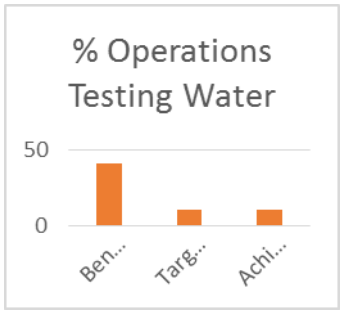
C.



D.



E.



F.

Highlight the major successful outcomes of the project in quantifiable terms.
More than 100 people received new training required by the Food Safety Modernization Act for fresh produce operations. 46 operations in Indiana completed and passed 3rd party food safety audits. More than 340 people who grow produce for direct marketing or other local food supply learned about on-farm food safety practices; 85% intend to improve their practices, and 58% reported improving their practices after one growing season.

Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.
Individuals who attended educational programs, met with a consultant, or received audit cost-share reimbursements, and their fresh produce business operations, benefited directly from this project. This includes fruit and vegetable farmers who sell direct to consumers and/or to wholesale buyers producing on acreage ranging from less than 1 to more than 100, and with gross produce sales from less than $2,500 to more than $200,000.

Indirectly, Indiana's fresh produce industry as a whole, and people who consume that fresh produce, benefit through the improvements in food safety awareness and practice that are expected to reduce produce-related illness and resultants disruptions in produce markets.

Clearly state the number of beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.
Direct beneficiaries include 482 that participated in educational programs, audit cost-share, and/or consulting.

Operations that attended the direct-market training represent at least $720 thousand in produce sales; this project has reduced the risk that those sales will be lost due to foodborne illness.

The value of Indiana cantaloupe and watermelon was $40.5 million in 2012. This project has benefited this industry by assisting operations in meeting food safety requirements of federal government and buyers; if requirements were not met the industry could fail. Also, if this project prevents an outbreak of illness traced to cantaloupe or watermelon, the benefit could range from 5% to 20% of the total value.

The value of all fresh market fruit vegetable production in Indiana in 2012 was approximately $80,000,000. To the extent that this project contributes to the survival of this industry by supporting its growth and reducing risks, the economic impact could be equivalent to the value of the industry.

LESSONS LEARNED

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.

A two-hour on-farm food safety program for direct marketers provides valuable information to growers, inspires them to plan and actually make improvements in food safety. The program can be managed at the state level and delivered at the county level. It can be used as one component of longer one-day, or multi-day programs.

Describe unexpected outcomes or results that were an effect of implementing this project.

The stakeholder meeting convened by NVA brought together representatives of agencies, organizations and businesses that had not previously convened to discuss produce safety topics at one time: growers, retail grocery stores, wholesale produce distributors, officials from Indiana Departments of Health and Agriculture, and Purdue Extension educators.

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

Use of water test kits distributed at the programs for direct marketers was lower than expected. In part this was probably because attendees who use water from city or rural water utilities do not need to test their water. Another likely explanation is that regulations do not clearly require water testing for many who attended this program. Suggestions to increase participation in future similar programs would be: match the program to activities required by governments or markets; consider an aggressive promotion program that includes multiple contacts with potential participants.

Lessons learned should draw on positive experiences (i.e., good ideas that improve project efficiency or save money) and negative experiences (i.e., lessons learned about what did not go well and what needs to be changed).

Train-the-trainer instruction for the direct-market curriculum was provided by webinar and through an online recorded program. This proved an efficient means of developing a cadre of trainers around the state who could host or teach the program in their counties.

Participation in the consulting and 3rd party audit cost-share programs that went beyond the beginning-level food safety training was lower than expected. It appears that the Indiana produce industry would benefit from more intermediate-level food safety training opportunities that build

on awareness and knowledge gained at the direct-marketer and PSA produce safety programs, enabling producers to create and implement comprehensive farm food safety plans.

Providing FSMA-approved trainings was delayed until the end of the project because the approved curriculum was not available. In future projects it may be better not to rely on materials and regulations that are not available at the start of the project.

CONTACT PERSON

Elizabeth Maynard
219-548-3674
emaynard@purdue.edu

BUDGET

Items:	**Paid:**	**Allotted:**
Salaries & Wages	$35,175.85	
Subcontracts	$51,999.09	
Consultants	$17,452.27	
Communications	$399.55	
Travel	$1,290.23	
Publication/Duplication	$278.00	
Other S&E	$12,853.40	
Not spent		$1,722.61
Total Awarded:	**$121,171.00**	
Total Expended:	**$119,448.39**	

ADDITIONAL INFORMATION

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

Extension Publication:
On-farm Food Safety for Produce Growers: Microbial Water Quality Testing. Scott Monroe, Michael O'Donnell, Elizabeth Maynard. 8 pp. mdc.itap.purdue.edu/item.asp?Item_Number=GP-2-W

Website:
ag.purdue.edu/hla/foodsafety

Blog articles:
ag.purdue.edu/hla/foodsafety/blog/default.aspx

Report:
Indiana Audit Service Phase I: Opportunity Identification. April 2016. New Ventures Advisors. (available on request from emaynard@purdue.edu)

Project Title: Growing Opportunities

PROJECT SUMMARY

Provide a background for the initial purpose of the project, which includes the specific issue, problem, or need that was addressed by this project.
Chronic food insecurity in Indiana is complicated; it's not only getting enough food, but getting the right food and learning to make healthy choices. Eating nutritiously is a daily struggle for low-income individuals. South Central Community Action Program (SCCAP) envisions a community where all individuals, regardless of income, have an abundance of nutritious food, are healthy, economically independent, and empowered to reach their full potential. In order to achieve that vision, SCCAP requests support for the Growing Opportunities hydroponic greenhouse initiative which will grow specialty crops including herbs (basil, cilantro, parsley) and leafy greens (kale, butter lettuce, swiss chard, romaine lettuce, red oak leaf).

In addition, Growing Opportunities will provide job training to low-income people, with disabilities and other significant employment barriers, as well as improve their knowledge of nutrition, cooking, and hydroponic farming focusing on herbs and leafy greens. We will hire a Nutrition and Marketing Associate who will teach program participants, and other community members, how to cook healthy meals at home, select the most nutritious foods on a tight budget, and to preserve food grown in gardens. The Nutrition and Marketing Associate will plan a nutrition curriculum for trainees and community members based on specialty crops grown by Growing Opportunities.

Describe the importance and timeliness of the project.
More than 1 in 10 Hoosiers find it difficult, if not impossible, to obtain non-processed fruits and vegetables. Most weeks they, and their families, are unable to eat any fresh, non-processed foods. According to the USDA, in August 2013, there were 931,675 Indiana residents (approximately 14% of the state's population) enrolled in the Supplemental Nutrition Assistance Benefits Program (SNAP, formerly known as Food Stamps). Not only is it critically important no Hoosier goes to bed hungry, for optimum health they need access to plenty of fresh produce and the knowledge of proper preparation.

Diet-related illnesses such as cardiovascular disease, obesity, and diabetes are at an all-time high. Research has repeatedly shown increased consumption of fruits and vegetables is a primary preventative measure against these diet related illnesses. By increasing low-income individual's knowledge of nutrition, fresh food preparation, cooking, and hydroponic growing methods of herbs and leafy greens, our project will help to improve the consumption rate of these nutritious specialty crops among low-income people in Indiana, ultimately increasing the competitiveness of specialty crops.

If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complemented and enhanced previously completed work.
N/A

PROJECT APPROACH

Briefly summarize activities and tasks performed during the entire grant period. Whenever possible, describe the work accomplished in both quantitative and qualitative terms. Specifically,

*discuss the tasks provided in the **Work Plan** of the approved project proposal. Include the significant results, accomplishments, conclusions and recommendations. Include favorable or unusual developments.*

Hired Nutrition and Marketing Associate. We decided using IU interns made the most sense for the program.
All initial supplies were ordered and continue to be ordered as needed by the Greenhouse Manager.
We developed our initial marketing information and techniques, and began researching ways to increase produce competitiveness.
Identified a Customer list.
Researched customer needs via customer questionnaires and discussions. Took field trips to "organic" markets and venues so we could begin creating a future business plan.
Planned nutrition curriculum for Growing Opportunities trainees and the community at large.
Held first nutrition workshop
Monitored the reception and results of our workshops in order to improve the information clients were receiving.
Prepared and submitted daily call reports, weekly itinerary reports, weekly review reports, monthly sales reports, and any other reports as needed in order to provide a proper flow of information for planning and evaluation activities.
Developed prospective produce accounts through market analysis, sales contacts, and sales techniques to ensure full market coverage.
Submitted final report to ISDA

Over the course of the grant we realized that daily call reports were unnecessary as were the weekly itinerary reports. While interns have been integral to Growing Opportunities success, We found the program director needed, in actuality, to be a fulltime greenhouse manager. Developing new market contacts needs to be undertaken by the greenhouse manager as that's "where the buck stops" and produce customers need the continuity of dealing with the same person on a regular basis, instead of a constantly changing series of interns, in order for them to have full confidence in the Growing Opportunities initiative and our products.

If the overall scope of the project benefitted commodities other than specialty crops, indicate how project staff ensured that funds were used to solely enhance the competitiveness of specialty crops.
N/A

Present the significant contributions and role of project partners in the project.
N/A

GOALS AND OUTCOMES ACHIEVED

Describe the activities that were completed in order to achieve the performance goals and measurable outcomes identified in the approved project proposal or subsequent amendments.
Over the course of the grant Growing Opportunities has expanded the varieties of produce we grow. We now offer multiple leafy green specialty crop products which are grown and sold year-round to local retail outlets. Our top-selling specialty crops are Bibb lettuce, Ruby Sky lettuce, Spring Greens Mix, Oscarde, Tropicana, Coastal Romaine, Green Oakleaf, Emperor Spinach, Arugula, Winter Greens Mix, and Basil. Over 20,000 units of specialty crops were sold during the grant period at 10 different locations. We also donate our products to three nonprofit organizations serving those in need. The addition of a bagged lettuce mix to our product lineup

increased our sales by 5.9%. This new product, fulfilled our goal to “identify and market new products in order to reach the 11% increase in sales.”

Growing Opportunities interns held three nutrition workshops over the course of the grant with Mother Hubbard’s Cupboard, SCCAP Head Start, and Thriving Connections. There was an average 25% increase in participant’s knowledge of preparing, cooking leafy greens, and their nutritional benefits. By reviewing the pre and post-tests participants took we were able to conclude that most individuals are aware of the nutritional value of leafy greens, however they stumble when it comes to preparing them in a variety of ways. Further workshops should focus on a variety of ways to incorporate leafy greens into meals outside of the standard salad. During the last year of the grant we broadened the spectrum of workshops to include educational workshops with Indiana University, Purdue Extension, and FFA. During these educational workshops we addressed the nutritional benefits of leafy greens and hydroponic growing. Our partnership with FFA allowed us to reach over 200 4th graders in the Spencer-Owen Community School System.

Three Growing Opportunities job training cohorts graduated during this grant cycle. The data gathered through pre and post testing reveal an average increase of participant’s job skills by 55% and an average increase in knowledge and growing skills of leafy greens of 75%. 54% of the programs graduates have found employment. Research by the Arc of the United States found that in 2010 only 15% of disabled individuals were employed.

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

Provide a comparison of actual accomplishments with the goals established for the reporting period.
The first two goals address increasing knowledge or leafy greens and how to prepare them. Growing Opportunities was able to meet this goal by providing three nutrition based workshops in partnership with other non-profit organizations. These goals were also meet with our 20 week job training program. Each class includes lessons addressing the hands on farming techniques used to grow leafy greens as well as three weeks of nutrition based lessons. The target outcome was to see at least a 40% increase in knowledge of leafy greens and there preparation. The nutrition workshops participants and the training program showed a combined average increase of knowledge of 50%.

While on the surface we did address our third goal of increasing year-round availability of local herbs and leafy greens; we did not meet our target outcome of an 11% increase in sales, $74,520. Our sales totals for the grant cycle were $28,881.

Our final goal was to increase the number of hydroponic herb and leafy green growers by 20 new farmers. This goal was exceeding by training 24 new farmers in growing leafy greens via hydroponic methods. Of the 24 farmers trained 13 acquired jobs during or after participating in the Growing Opportunities job training program.

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

Growing Opportunities interns perform a pre-test at the beginning of nutrition workshops and our job training program in order to get a baseline of participant's knowledge. After completion of workshop and the job training program a post-test over the same information is giving to determine knowledge gained. See baseline data examples in additional information.

Highlight the major successful outcomes of the project in quantifiable terms.
The greatest success of Growing Opportunities has been the job placement post-graduation. An unexpected benefit was the significant increase in the confidence, self-esteem, and pride the graduates expressed. Frankly, our employment placement for our graduates would be higher except we have several clients who refuse to work anywhere but Growing Opportunities. By creating a safe, nurturing space where our clients could not only learn new skills but gained personal worth many of our clients have chosen to continue volunteering at the greenhouse. We are currently working on a bridge curriculum to move clients from program to employment.

Growing Opportunities reached over 650 individuals through our nutrition and education workshops and programs. The target outcome was to see at least a 40% increase in knowledge of leafy greens and there preparation. The nutrition workshops participants and the training program showed a combined average increase of knowledge of 50%.

Through local food banks and pantries Growing Opportunities was able to provide the community with 1,126lbs of leafy greens, 3603 heads, were donated.

Provide a description of the groups and other operations that benefited from the completion of this project's accomplishments.
24 Stone Belt clients participated in the Growing Opportunities 20 week program. The data gathered through the pre and post tests show an on average increase in job skills of 55% and an on average increase in knowledge and growing skills of leafy greens of 75%. Of the 24 Stone Belt clients who participated 54% acquired jobs during or after completing the program.

All produce not sold was donated to Community Kitchen, Mother Hubbard's Cupboard, and Hoosier Hill Food Bank, Hoosier Hills Food Bank deliveries to food pantries in seven surrounding counties. Over the course of the grant 1,126lbs of leafy greens, 3603 heads, were donated. Monroe County Humane Society received 50lbs of aphid infested leafy greens for their shelter animals.

SCCAP Head Start came to the greenhouse twice for field trips.

Clearly state the number of beneficiaries affected by the project's accomplishments and/or the potential economic impact of the project.

- 3,603 heads of leafy greens were donated to food pantries.
- 20,148 heads of lettuce sold
- 629 individuals reach via nutrition and education workshops
- 24 Stone Belt clients participated in the Growing Opportunities job training program, 13 acquired jobs during or after participating in the Growing Opportunities program.

LESSONS LEARNED

Offer insights into the lessons learned by the project staff as a result of completing this project. This section is meant to illustrate the positive and negative results and conclusions for the project.
When working in the agricultural field it is important to remember that things are incredibly unpredictable. Having a solid understanding of agriculture and the science behind it is very important in a program like ours. The original greenhouse manager and interim manager developed a strong program; however without a background in agriculture there were some issues along the way. Listen to the professionals, plan for failure, and ask questions.

The emotional impact that Growing Opportunities has had on our Stone Belt clients has been overwhelming. We have seen an increase in self-worth and self-esteem. Working in the greenhouse gives our clients a sense of worth and empowerment. We have clients who never thought they could have a job working in the community and providing for themselves. The true power of this project is when you look at our friends and partners from Stone and see how growing lettuce has changed their lives.

Describe unexpected outcomes or results that were an effect of implementing this project.
N/A

If goals or outcome measures were not achieved, identify and share the lessons learned to help others expedite problem-solving.
The original program manager did not have a background or hands on experience with agriculture or farming. This led to setting an unrealistic goal of seeing "$74,520 gross sales (A 11% increase over of 2012 market value of sales in nursery, greenhouse, floriculture, and Sod in Monroe County)" the first year. The 2012 Agricultural Census market value of sales in nursery, greenhouse, floriculture, and Sod in Monroe County that was used as a baseline for this goal contains too broad of a data scope to obtain realistic sales numbers. The baseline of data used is described by the USDA to include: Crops in the open; Nursery Stock, Sod Harvested, Vegetable Seeds, Cut Flowers and Cut, Florist Greens, Bedding/Garden Plants, Flower Seeds and Crops Under Glass or Other Protection; Bedding/Garden Plants, Nursery Stock, Cut Flowers and Cut Florist Greens, Potted Flowering Plants, Foliage Plants, Indoor, Greenhouse Vegetables, and Mushrooms. Purdue estimates that only 270 acres of land in Indiana were dedicated to high tunnel and greenhouse crop production (all crops). Of that, only 27.8 acres were devoted to food production in 2012 for the whole state of Indiana. In a recent report Purdue also showed that the state of Indiana produces around $500,000 in lettuce production. When using agriculture census data the user should have a clear understanding of terms and markets being discussed. A better path would have been to reach out to the local Farm Bureau for Monroe County farm data.

Lessons learned should draw on positive experiences (i.e., good ideas that improve project efficiency or save money) and negative experiences (i.e., lessons learned about what did not go well and what needs to be changed).
When setting up the Growing Opportunities job training program no one thought about the clients we serve that are unemployable. The original intent was to graduate a class and move on to the next group. Once the program got started it became clear that some of our best clients were unable to work outside of the greenhouse for varied reason. Those of our friends who are unable to work elsewhere were kept in the greenhouse program. These individuals allow us to have a consistent group that is trained and able to help with new recruits.

CONTACT PERSON

Errin Logsdon
812-821-7470
elogsdon@insccap.org

BUDGET

Items:	**Paid:**	**Allotted:**
Personnel (salary only)	$41,510.00	$41,510.00
Travel	$1000.00	$1,000.00
Equipment	$0	$0
Supplies	$23,032.80	$23,032.80
Contractual	$1900.00	$1,900.00
Other	$0	$0
Total Awarded:	**$67,442.80**	
Total Expended:	**$67,442.80**	

ADDITIONAL INFORMATION

Provide additional information available (i.e. publications, websites, photographs) that is not applicable to any of the prior sections
http://www.idsnews.com/article/2015/10/growing-opportunities-combines-job-training-urban-farming

BASELINE DATA EXAMPLES
Evaluation Report from 2nd Growing Opportunities Job Training Program, which ended in February 2016:
We asked "Did the class help you overcome an obstacle that you thought could keep you from finding a job?"

- Stephanie: "Yes, I am more motivated and excited about jobs now."
- Michael: "It helped me to think about employment again. I decided to start my own business doing freelance web design."

We asked "How has your life changed from participating in Growing Opportunities?

- Stephanie: "I'm happier now."
- Samantha: "I learned new skills. I am more confident."
- Michael: "I decided to talk to VR about owning my own business."
- Rob: "I feel better about living in Bloomington, it isn't so scary to work [in Bloomington]."
- Jessica: "It's made a big impact in my life—I learned so many new things."

Goal	**Outcomes**	
Goal 1: Low income people, particularly those with disabilities, become more self-sufficient	Job obtained	2
	Jobs maintained for 90 days	3
	Increases in income	0
	# who achieve living wage	0
	Obtained skills/competencies for employment	7
Goal 2: The conditions of low-	Jobs created	0

income people are improved	Accessible living wage jobs created	0
	Increase in availability or preservation of community facilities	1
	Increase in availability or preservation of community facilities in low-income neighborhoods	0
Goal 3: Low-income people own a stake in their community	Number of volunteer hours	800
	Low-income people participating in formal community organizations	8
	Number of low-income people involved in community activities	8
Goal 4: Low-income people achieve their potential by strengthening family and other supportive environments	Pounds of food provided	200
	Number who receive food assistance	3
	Percentage of participants with disabilities who achieve job and life goals	0

Class Average for Skills/Compentencies Obtained for Employment

Measurement scale. Week 1 based on observation. Week 20 based on client survey.

1= no ability, poor performance, no knowledge
2= basic need assistance, okay performance, little knowledge
3= works with supervision, average performance, average knowledge
4= works without supervision, good performance, some knowledge
5= ability to assist others, excellent performance, a lot of knowledge

*Average Change In All Skills/Competencies = **3.2***

Skill Variable	**Description**	**Week 1 Baseline**	**Week 20**	**Change**
Foodsafety	Food safety: washing hands according to GAPs, wearing proper attire, including closed toed shoes, hairnets/hats, and gloves.	1	4.2	3.2
Cleaning	Cleaning the greenhouse and including sweeping, wiping down tables, and cleaning channels.	1	4.1	3.1
Record	Checking and recording greenhouse temperature, pH, and nutrients.	1	4.8	3.8
Org	Organizing supplies and placing them in appropriate location	1	4.6	3.6
Seed	Seeding into oasis cubes, one seed per cube, labeling, and placing into nursery.	1	3.8	2.8
Transp	Transplanting, including choosing the best plants for production, thinning, and placing into channels.	1	4.6	3.6
Harvest	Harvesting individual plants, removing yellowing or torn leaves, and removing roots.	1.9	4.7	2.8

Pack	Packaging of produce in boxes with appropriate number, labeling	1.2	5.0	3.8
Goal	Settting SMART goals for individual's carreer	1	4.2	3.2
Attitude	Maintaining positive attititude despite setbacks	1.6	4.7	3.1
Trans	Has a plan for transportation to get to and from work	1.2	4.3	3.1
Emerg	Prepared for basic emergencies at work	1	4.1	3.1
Support	Has a resource list in place, knows where to go in times of needing additional support	1.2	3.7	2.5
Time	Arrives on time and has good attendance. Notifies supervisor if absent.	1	4.0	3.0
Listen	Listens to instructor without interrupting. Raises hand.	1	4.7	3.7
Team	Works with others easily without talking too much	1	4.5	3.5
Conflict	Manages disagreements in the workplace with respect and patience	1	3.7	2.7
Change	remains flexible to changes in schedule and job duties	1	4.2	3.2
Elev	Writes, memorizes, and speaks elevator speech with enthusiasm	1	4.1	3.1
Resume	Writes resume with few errors	1	4.5	3.5
Interview	Able to answer interview questions with appropriate answers	1	4.2	3.2
Dress	Wears appropriate clothes to class, understands appropriate clothes for work interviews	1.3	4.2	2.9

We also asked in our exit interview, “How well prepared do you feel you are to enter employment?” Participants answered on a Likert scale of 1-5, with 1 being not at all, and 5 being very. The average response was 4.6

Evaluation Report from 3rd Growing Opportunities Job Training Program, in progress:
We asked “Did the class help you overcome an obstacle that you thought could keep you from finding a job?”

- Brittani: “Yes, I now know I can do a lot more than I thought.”
- Cameron: “I got a job at IU, (because) I learned how to work.”

We asked “How has your life changed from participating in Growing Opportunities?

- Cayla: “I’m happier now and feel good about who I am.”
- Brandon: “I like the greenhouse, it’s a happy place.”
- Michael: “I email all the customers and do the newsletter.”

- Rob: “I got a job, it makes me happy to work for a customer.”
- Luke: “It’s made me work with other people, I finally got a job..”

Goal	Outcomes	
Goal 1: Low income people, particularly those with disabilities, become more self-sufficient	Job obtained	10
	Jobs maintained for 90 days	7
	Increases in income	10
	# who achieve living wage	0
	Obtained skills/competencies for employment	18
Goal 2: The conditions of low-income people are improved	Jobs created	0
	Accessible living wage jobs created	0
	Increase in availability or preservation of community facilities	0
	Increase in availability or preservation of community facilities in low-income neighborhoods	0
Goal 3: Low-income people own a stake in their community	Number of volunteer hours	1000
	Low-income people participating in formal community organizations	18
	Number of low-income people involved in community activities	18
Goal 4: Low-income people achieve their potential by strengthening family and other supportive environments	Pounds of food provided	973
	Number who receive food assistance	4
	Percentage of participants with disabilities who achieve job and life goals	0

Class Average for Skills/Compentencies Obtained for Employment

Measurement scale. Week 1 based on observation. Week 20 based on client survey.

1= no ability, poor performance, no knowledge
2= basic need assistance, okay performance, little knowledge
3= works with supervision, average performance, average knowledge
4= works without supervision, good performance, some knowledge
5= ability to assist others, excellent performance, a lot of knowledge

*Average Change In All Skills/Competencies = **3.72***

Skill Variable	Description	Week 1 Baseline	Week 20	Change
Foodsafety	Food safety: washing hands according to GAPs, wearing proper attire, including closed toed shoes, hairnets/hats, and gloves.	1	5.0	4.0
Cleaning	Cleaning the greenhouse and including sweeping, wiping down tables, and cleaning channels.	1	5.0	4.0
Record	Checking and recording greenhouse temperature, pH, and nutrients.	1	4.9	3.9
Org	Organizing supplies and placing them in appropriate location	1	4.9	3.9

Seed	Seeding into oasis cubes, one seed per cube, labeling, and placing into nursery.	1	5.0	4.0
Transp	Transplanting, including choosing the best plants for production, thinning, and placing into channels.	1	5.0	4.0
Harvest	Harvesting individual plants, removing yellowing or torn leaves, and removing roots.	1	4.9	3.9
Pack	Packaging of produce in boxes with appropriate number, labeling	1	5.0	4.0
Goal	Settting SMART goals for individual's carreer	1	4.2	3.2
Attitude	Maintaining positive attititude despite setbacks	1.4	4.8	3.4
Trans	Has a plan for transportation to get to and from work	1	5.0	4.0
Emerg	Prepared for basic emergencies at work	1	4.5	3.5
Support	Has a resource list in place, knows where to go in times of needing additional support	1	4.7	3.7
Time	Arrives on time and has good attendance. Notifies supervisor if absent.	1	4.8	3.8
Listen	Listens to instructor without interrupting. Raises hand.	1	4.6	3.6
Team	Works with others easily without talking too much	1	4.8	3.8
Conflict	Manages disagreements in the workplace with respect and patience	1	4.9	3.9
Change	Remains flexible to changes in schedule and job duties	1	4.8	3.8
Elev	Writes, memorizes, and speaks elevator speech with enthusiasm	1	3.9	2.9
Resume	Writes resume with few errors	1	4.0	3.0
Interview	Able to answer interview questions with appropriate answers	1	4.7	3.7
Dress	Wears appropriate clothes to class, understands appropriate clothes for work interviews	1	5.0	4.0

We also asked in our exit interview, “How well prepared do you feel you are to enter employment?” Participants answered on a Likert scale of 1-5, with 1 being not at all, and 5 being very. The average response was 4.7

Nutrition Workshop 2

August 6, 2015

Overview:

We planned, executed, and evaluated a second nutrition and cooking workshop that featured the use of kale and other dark leafy greens to improve health among low-income people in the Bloomington-Monroe County area. The goals of this project were to increase participants' knowledge of the nutrition and related health benefits of leafy greens, and how to cook them. An evaluation method was designed to measure the impact of the workshop.

Participants:

We held the workshop at a weekly meeting for Thriving Connections. This is a program of South Central Community Action Program (SCCAP) for poverty alleviation that emphasizes building a support system for low-income families to help them move out of poverty. Among the activities participants do is attend weekly meetings where dinner is served, childcare is provided, and a program topic is discussed. We made a recipe that featured kale to serve for the dinner portion of the gathering. The nutrition lesson was then the program portion of the gathering.

Number of low-income participants	**10**
Number who completed pre-test	10
Number who completed post-test	9
Youngest participant	14 years old
Oldest participant	47 years old

Curriculum:

Participants completed true/false assessments before and after a brief presentation with an emphasis on the health benefits of dark greens and how to incorporate eating them with existing food habits. All materials that were developed for this workshop are attached at the end of this document.

Budget:

Ingredients	**Cost**
Assorted bakery breads (3)	$12.97
Kale	$7.92
Sweet Potatoes	$7.87
Sweet Italian Sausage, ground	$29.94
Dried Thyme	$4.99
Sweet Onions (1 bag)	$4.99

Butter	$3.79
Low-sodium Chicken Broth	$5.28
Olive Oil	$5.99
Total Cost	**$82.74**
Remaining Budget	$300-$82.74 = **$217.26**

Methods:

- Recipe for Kale, Sausage, and Sweet Potato Hash was prepared and served
- Workshop participants moved to classroom space, where they signed in and began the pre-test
- A 30 minute presentation was given, with group participation
- Workshop participants took the post-test
- After the workshop, we entered raw participant and test data into an Excel spreadsheet and measured mean improvement/analyzed results
- Although both low-income and high-income individuals participated in the workshop, the data in this report reflects only the low-income participants

Results:

Participants	**10**
Mean pre-test score	**75%**
Mean post-test score	**90%**
Mean % change	**+15%**

Discussion:

Of the nine who took both assessments, there was one participant whose score decreased by 10% on the post-test. However, upon looking at that participant's answers, the questions missed after the workshop were different from the question missed beforehand. This unique result indicates that some of the material was unclear. If we excluded this outlier (-10% change), we see that the mean percent change would have been +20%.

The participant whose score increased the largest amount (+60%) was carrying a teenage pregnancy. We are especially pleased to see that this participant walked away from the workshop with knowledge of the importance of folate for proper development of her infant's brain and spinal cord.

Verbal and written feedback for the workshop was only positive. One participant wrote that she thought she only liked spinach, but this new dish was tasty. Other participants commented that they will start adding leafy greens to things they already eat.

Recommendations:

- Have volunteers take the pre- and post- assessments to edit them for difficulty/content before designing the workshop presentation
- Design a sequence of nutrition education that is more linear – e.g., what is happening as the plant is in your mouth, stomach, GI tract, etc.
- Plan to allot more time for questions, especially if there are several participants in the workshop

Success:

- Quantitative data indicates that the target percent change (+40%) was not met
- Qualitative data (comments, participant enthusiasm, individual success stories) leaves us with a sense that the workshop was impactful and will lead to positive changes

Sausage, Kale, and Sweet Potato Hash

Total time: 30 minutes
Makes about 4 to 6 servings

Ingredients:

- 2 tablespoons olive oil (or other vegetable oil)
- ¾ pound sweet Italian sausage links (or you can use ground Italian sausage!)
- 1 medium onion, chopped
- 2 medium sweet potatoes, peeled and cut into small cubes
- ½ teaspoon dried thyme
- salt & pepper
- 1 cup low-sodium chicken broth
- 1 bunch of kale, with thick stems removed, torn into bite-size pieces (you could also use frozen kale!)

Directions:

1. Heat 1 tablespoon of the oil in a large skillet over medium-high heat. Add the sausage and cook, breaking it up with a spoon, until browned and cooked through, 6 to 8 minutes; transfer to a plate.

2. Add the onion, sweet potatoes, thyme, and ¼ teaspoon each salt and pepper to the skillet and cook, stirring occasionally, until the onion is softened, 3 to 5 minutes (if the pan becomes too dark, add 2 tablespoons water and continue cooking). Add ½ cup of the broth, cover, and cook until the potatoes are tender, 5 to 7 minutes more.
3. Uncover the skillet and add the remaining ½ cup of broth. Add as much kale to the skillet as will fit and cook, tossing frequently and adding more kale when there is room, until the liquid is almost evaporated and the kale is tender, 4 to 5 minutes. Return the sausage to the skillet and toss to combine.

Nutrition Information (per serving):

Fat: 25 g	*Saturated Fat:* 7 g
Cholesterol: 237 mg	*Sodium:* 852 mg
Protein: 23 g	*Carbohydrates:* 42 g
Sugar: 9 g	*Fiber:* 7 g
Iron: 5 mg	*Calcium:* 301 mg

Name: _____.

Date of Birth: _____.

Please indicate (by circling) if you are a TC leader or a TC ally.

Pre-test

Please answer the following questions to the best of your ability.

Circle whether each statement is "True" or "False"

1. Kale has more calcium than dairy milk calorie-for-calorie. True False
2. Folate, which is found in kale, is necessary to prevent birth defects during pregnancy. True False
3. Beef has more iron than kale calorie-for-calorie. True False
4. Fat-free dressing on a salad is the healthiest way to eat greens. True False
5. Fiber is a substance that acts like a broom to "sweep out" the digestive tract. True False
6. Meat is a good source of fiber. True False
7. Eating foods high in fiber can reduce cholesterol in the body. True False
8. Eating dark leafy greens reduces the risk of developing cancer due to substances called antioxidants. True False
9. Vitamin K, found in dark leafy greens, is what helps our blood clot when we receive a wound. True False
10. Eating dark leafy greens offers little to no protection against heart disease or type-2 diabetes. True False

Bonus: Comment below with how you have viewed dark leafy vegetables before – what they taste like to you, how you thought they were cooked, etc.

KALE and other DARK LEAFY GREENS

Thriving Connections Nutrition Workshop Facts Sheet

Some examples of dark leafy greens:

- Collard Greens
- Arugula
- Swiss Chard
- And more!

How much to aim for per week of the dark leafy greens

- A
- A
- Teens & Adults: 1 ½ - 2 cups

Note: 2 cups raw = 1 cup cooked = one serving above

Important Vitamins & Minerals Found in Leafy Greens!

Calcium

A mineral that helps build & maintain our bones. Leafy greens have more calcium per calorie than dairy, *and* it is in a form that is more useful for our bodies!

Iron

A mineral that helps our blood carry oxygen to the rest of our body tissue. Not having enough iron in the diet results in anemia, one symptom of which is feeling fatigue.

Vitamin A

Needed for eye, skin, and immune health. It is not absorbed in the body unless fat is present!

Vitamin C

Helps with wound healing, as well as iron absorption. Kale (and some other leafy greens) has more vitamin C per calorie than an orange!

Vitamin K

Necessary for proper blood clotting in the body, which protects us from blood loss when we are wounded.

Folate

Very important for the production and maintenance of new cells (and therefore prevents birth defects in developing infants)

Name: _____.

Post-test

Please answer the following questions to the best of your ability.

Circle whether each statement is "True" or "False"

1. Kale has more calcium than dairy milk calorie-for-calorie. True False
2. Folate, which is found in kale, is necessary to prevent birth defects during pregnancy. True False
3. Beef has more iron than kale calorie-for-calorie. True False
4. Fat-free dressing on a salad is the healthiest way to eat greens. True False
5. Fiber is a substance that acts like a broom to "sweep out" the digestive tract. True False
6. Meat is a good source of fiber. True False
7. Eating foods high in fiber can reduce cholesterol in the body. True False
8. Eating dark leafy greens reduces the risk of developing cancer due to substances called antioxidants. True False
9. Vitamin K, found in dark leafy greens, is what helps our blood clot when we receive a wound. True False
10. Eating dark leafy greens offers little to no protection against heart disease or type-2 diabetes. True False

Bonus: Comment below with how you might view dark leafy vegetables now – what they taste like to you, how you think you can cook them on your own, etc.

Highlights from Kaylee's nutrition workshop, "Kale Brownies for Kids"

Above: Three friends look apprehensive when they see green stuff on the table!

Left: Later, those same friends had a blast getting to tear the fresh kale into small pieces with Kaylee.

Highlights of Growing Opportunities Third Job Training Class – Professional Photos

Left: Display at Purdue Nature Day.

Below: “Meet Your Local Vendor” tabling at Lucky’s Market.