

**USDA FARMERS MARKET AND LOCAL FOOD PROMOTION PROGRAM  
(FMLFPP)  
Final Performance Report**

The final performance report summarizes the outcome and activities of your FMLFPP award objectives. Failure to submit acceptable closeout reports within 90 calendar days following the grant end date may result in exclusion from future AMS grant opportunities.

This final report will be made available to the public after it is reviewed by FMLFPP staff. Write the report in a way that promotes your project's accomplishments, as this document will serve as not only a learning tool, but a promotional tool to support local and regional food programs. Particularly, recipients are expected to provide both qualitative and quantitative results to convey the activities and accomplishments of the work.

The report is due no later than 90 calendar days after the performance period end date. The report must be typed, single-spaced, 11-point font, and not exceed fifteen (15) pages more than the Final Performance Report template. For example, if the Final Performance Report template is six (6) pages before you begin entering your project information, your report may be up to 21 pages (6 pages + 15 pages).

Provide answers to each question and all applicable outcome indicators. If you are unable to provide a response, or a question is not applicable, explain why. It is preferred that you email your completed performance report to your assigned Grants Management Specialist (GMS). If extenuating circumstances prevent the report from being emailed, please contact your assigned GMS for fax instructions.

<b>Period of Performance</b> <i>(e.g. September 30, 2016 – September 29, 2019)</i>	09/30/17 – 03/31/19
<b>Date Report Submitted to FMLFPP</b>	April 18, 2019
<b>Grant Agreement Number</b> <i>(e.g. 16-LFPP-XXXXXX)</i>	AM170100XXXXG083
<b>Project Title</b>	An Economic Feasibility Study of Establishing an Individual Quick Freeze (IQF) Facility to Process Midwest Blackberries and Strawberries.
<b>Recipient Organization's Name</b>	Trellis Growing Systems
<b>Authorized Representative's Name</b>	Richard Barnes
<b>Authorized Representative's Phone Number</b>	(260) 241-3128
<b>Authorized Representative's Email Address</b>	rcbarnes@trellisgrowingsystems.com
<b>Year Grant was Awarded</b>	2017
<b>Award Amount</b>	\$38,152

Who may FMLFPP or the public contact with questions, or for long-term success stories?

Authorized Representative listed above

Different person: Name:

Email:

Phone:

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1. Executive Summary: In 200 words or less, describe the project's need, purpose, goals, and quantifiable outcomes.

Commercial blackberry and strawberry growers in Indiana and Ohio need a cost-effective, consistent market for their USDA #2 quality fruit. Creating a value-added product that uses this fruit would help growers avoid major income shortfalls and be more profitable. This project's purpose was to study the feasibility of establishing an Individual Quick Freeze (IQF) facility in Circleville, Ohio. This facility would process fruit sourced from Indiana and Ohio into a line of premium blackberry, strawberry and berry blend products for local and regional sale direct to customers, grocers, food manufactures and institutions such as schools. The project goals were to complete an Economic Feasibility Study and develop a sustainable Business Model Plan. Quantifiable outcomes of this project include: 1) an assessment of Indiana and Ohio grower interest in supplying an IQF facility with berries, 2) an evaluation of potential costs and revenues associated with an IQF facility located in Circleville, and 3) a 3-year business plan for an IQF facility to process Ohio and Indiana berries.

2. Objectives: List the approved project objectives and indicate if they were completed.

Objectives		Completed?	
		Yes	No*
1	To complete an Economic Feasibility Study for an IQF Facility in Circleville, OH that will process locally-grown blackberries and strawberries.	x	
2	To develop a Business Plan for purchasing, aggregating, processing, storing and distributing the value-added berry products.	x	
3	To develop new marketing opportunities for fruit farm operations serving local markets.		x

*\*If no is selected for any of the objectives, you must expand upon this in the challenges section.*

3. Accomplishments: List the accomplishments achieved during the project's performance period and indicate how the accomplishments linked to the project's objectives.

Accomplishments	Relevant to Objective, Outcome, and/or Indicator
<b>Demographic Assessment &amp; Trend Analysis.</b> Information was taken from the most current US Census Bureau data for Indiana and Ohio, The Food Institute's Demographics of Consumer Spending and National Health and Nutrition Examination Survey.	Information gained from this accomplishment is needed for our 1st Objective and Outcome 5, indicator 1.
<b>End-User Survey.</b> Thirty-six berry growers completed our survey to determine purchase price points for various berries and their willingness to enter into an annual contract to supply an IQF facility. Regional berry production data was also obtained.	Information gained from this accomplishment is needed for our 1st Objective, Outcome 1 and indicators 1a-1c.
<b>Potential Sales Survey &amp; Analysis.</b> Data was taken from the 2012 Census of Agriculture and personnel interviews with regional frozen fruit buyers.	Information gained from this accomplishment is needed for our 1st Objective, Outcome 1 and indicators 1a-2b.
<b>Product Packaging Cost-Analysis.</b> Several online vendor prices were analyzed to determine the most cost effective individual and boxed	Information gained from this accomplishment is needed for our 2nd Objective and Outcome 5, indicator 1.

packaging. Retail packaging costs are ~\$0.32/lb. and bulk packaging are ~\$0.14/lb.	
<b>IQF Equipment Evaluation.</b> Used blast freezing equipment and IQF freezing equipment using nitrogen were compared in terms of equipment cost, efficiencies and finished product quality. Initial capitalization costs are higher for an IQF line but processing costs per pound are lower while product quality is better compared to blast freezing.	Information gained from this accomplishment is needed for our 2nd Objective.
<b>Food Safety Program Analysis.</b> The analysis covered compliance with FDA regulations (21 CFR Part 117 and Part 110), Ohio Revised Code Title 37, 3rd party certifications and key food safety program components such as the management system, sanitation, supplier control, traceability & recall, HACCP, process monitoring activities, worker training, security, etc.	Information gained from this accomplishment is needed for our 2nd Objective.
<b>Economic Feasibility Study.</b> This study is available on line at the TGS website <a href="http://trellisgrowingsystems.com/in-the-news/">http://trellisgrowingsystems.com/in-the-news/</a>	Completion of this accomplishment is our 1st Objective and is needed for our 3rd Objective.
<b>Business Plan Development.</b> A viable business plan for processing Midwest berries was created based on information gained from the economic feasibility study.	Completion of this accomplishment is our 2nd Objective and is needed for our 3rd Objective, and for outcome 3, indicator 3e and Outcome 5, indicator 1.

4. Challenges: List the challenges experienced during the project. Provide the corrective actions taken to address the challenge.

Challenges	Corrective Action and/or Project Change(s)
The end-user survey had a lower than expected response rate from local and regional growers (36 completed the online survey through PollDaddy).	No corrective actions or project changes anticipated as the growers who did respond are able to collectively produce a significant volume of fruit for IQF processing.
The food business consulting firm we had identified in our proposal for the business plan validation was not able to fit this task into their schedule.	We reached out to another food business consulting firm but they were also not able to fit this task into their schedule. We contacted the Northeast Indiana Small Business Development Center and we were able to get professional feedback on our business plan from their Regional Director.
Our 3rd objective was to “To develop new marketing opportunities for fruit farm operations serving local markets”. This objective was not fully achieved since this was a planning grant project.	This objective will be included in our 2019 LFPP Implementation Grant proposal.

5. Outcomes/Indicators: Quantify the overall progress of the outcomes and indicators. Include further explanation if necessary.

**Outcome 1: To Increase Consumption of, and Access to, Locally and Regionally Produced Agricultural Products**

The total numbers reached included 20 Ohio and Indiana farms that are members of the North American Raspberry & Blackberry Association, 14 Indiana blackberry farms associated with TGS, 118 members of the North American Strawberry Growers Association and several regional wholesale buyers. The 36 identified in 1.a-1.c. are the survey responders. The kitchen incubator reached was Toledo, Ohio-based CIFT (Center for Innovative Food Technology).

Indicator	Description	Number
<b>1.</b>	<b>Total number of consumers, farm and ranch operations, or wholesale buyers reached</b>	159
<b>1.a.</b>	The number that gained knowledge on how to buy or sell local/regional food OR aggregate, store, produce, and/or distribute	36
<b>1.b.</b>	The number that reported an intention to buy or sell local/regional food OR aggregate, store, produce, and/or distribute local/regional food	36
<b>1.c.</b>	The number that reported buying, selling, consuming more or supporting the consumption of local/regional food that they aggregate, store, produce, and/or distribute	36
<b>2.</b>	<b>Total number of individuals (culinary professionals, institutional kitchens, entrepreneurs such as kitchen incubators/shared-use kitchens, etc.) reached</b>	1
<b>2.a.</b>	The number that gained knowledge on how to access, produce, prepare, and/or preserve locally and regionally produced agricultural products	1
<b>2.b.</b>	The number that reported an intention to access, produce, prepare, and/or preserve locally and regionally produced agricultural products	1
<b>2.c.</b>	The number that reported supplementing their diets with locally and regionally produced agricultural products that they produced, prepared, preserved, and/or obtained	Not applicable

**Outcome 2: Increase customers and sales of local and regional agricultural products.**

Not applicable – this was a LFPP planning grant project

Indicator	Description	Number
<b>1.</b>	<b>Sales increased as a result of marketing and/or promotion activities during the project performance period</b>	
<b>1.a.</b>	Original Sales Amount (in dollars)	
<b>1.b.</b>	Resulted Sales Amount (in dollars)	
<b>1.c.</b>	Percent Change $((\frac{^n \text{ final} - ^n \text{ initial}}{^n \text{ initial}}) * 100 = \% \text{ change})$	
<b>2.</b>	<b>Customer counts increased during the project performance period</b>	
<b>2.a.</b>	Original Customer Count	
<b>2.b.</b>	Resulted Customer Count	
<b>2.c.</b>	Percent Change $((\frac{^n \text{ final} - ^n \text{ initial}}{^n \text{ initial}}) * 100 = \% \text{ change})$	

**Outcome 3: Develop new market opportunities for farm and ranch operations serving local markets.**

A 3-year business plan was developed. Other metrics are not applicable to this LFPP Planning Grant

Indicator	Description	Number
<b>1.</b>	<b>Number of new and/or existing delivery systems/access points of those reached that expanded and/or improved offerings of</b>	
<b>1.a</b>	Farmers markets	
<b>1.b.</b>	Roadside stands	
<b>1.c.</b>	Community supported agriculture programs	
<b>1.d.</b>	Agritourism activities	
<b>1.e.</b>	Other direct producer-to-consumer market opportunities	
<b>1.f.</b>	Local and regional Food Business Enterprises that process, aggregate, distribute, or store locally and regionally produced agricultural products	
<b>2.</b>	<b>Number of local and regional farmers and ranchers, processors, aggregators, and/or distributors that reported</b>	
<b>2.a.</b>	An increase in revenue expressed in dollars	
<b>2.b.</b>	A gained knowledge about new market opportunities through technical assistance and education programs	
<b>3.</b>	<b>Number of</b>	
<b>3.a</b>	New rural/urban careers created (Difference between "jobs" and "careers": jobs are net gain of paid employment; new businesses created or adopted can indicate new careers)	
<b>3.b.</b>	Jobs maintained/created	
<b>3.c.</b>	New beginning farmers who went into local/regional food production	
<b>3.d.</b>	Socially disadvantaged famers who went into local/regional food production	
<b>3.e.</b>	Business plans developed	1

**Outcome 4: Improve the food safety of locally and regionally produced agricultural products.**

*Only applicable to projects focused on food safety*

Not applicable – this was a LFPP planning grant project

Indicator	Description	Number
<b>1.</b>	Number of individuals who learned about prevention, detection, control, and intervention food safety practices	
<b>2.</b>	Number of those individuals who reported increasing their food safety skills and knowledge	
<b>3.</b>	Number of growers or producers who obtained on-farm food safety certifications (such as Good Agricultural Practices or Good Handling Practices)	

**Outcome 5 (Project-specific Outcome/Indicator from the Narrative (REQUIRED)): To create a Business Plan that can be used to support establishment of an IQF facility.**

Indicator	Description	Number
1.	Number of plans to guide and support establishment of an IQF facility business.	1

6. Community Partnerships (avoid using personally identifiable information):
- a. Who were your community partners?
  - b. How did they contribute to the overall results of the FMLFPP project?
  - c. How will they continue to contribute after the grant project ends?
  - d. What feedback have the partners provided (include specific comments)?

Our community partners included Trellis Growing Systems, Rhoads Farm Inc., Polter's Berry Farm, Mid-America Produce Safety Services and the Northeast Indiana Small Business Development Center. The president of Trellis Growing Systems (TGS) located in Fort Wayne, Indiana, was involved in evaluating the different processing line equipment options, completing the Economic Feasibility Study (EFS) and financial aspects (profit & loss and cash flow) of the Business Plan (BP). The VP of Rhoads Farms, Inc. located in Circleville, Ohio, contributed by gathering and evaluating information on processing line equipment and freezing methods, interviewing blackberry buyers to assess potential sales volumes and price points, gathering information on the infrastructure (land, building, utilities, transportation) needed for an IQF facility, review of the EFS and completion of the BP. Polter's Berry Farm, located in Fremont, Ohio, contributed by gathering information from strawberry growers for the End User Survey, interviewing strawberry buyers to assess potential sales volumes and price points and helped in reviewing the EFS and BP. Mid-America Produce Safety Services, located in Fort Wayne, Indiana, contributed an analysis of food safety program requirements for the proposed facility, helped in evaluating freezing equipment options in terms of food safety and provided technical support by gathering information on packaging and potential end users (berry farms located in Indiana and Ohio) and review of both the EFS and BP. The Regional Director of the Northeast Indiana Small Business Development Center (NE-SBDC), located in Fort Wayne, Indiana, reviewed the BP and provided feedback for refinement of our business plan. A Grower Operations and Commodities Salesman at a leading international berry marketing company provided us with valuable insight in sales and marketing strategies gained from his experience and interaction with commercial growers and produce buyers throughout the Southeast, Midwest and Mid-Atlantic regions.

This planning project has ended. Future activities, outside of the LFPP planning grant, will be focused on using the business plan to establish an IQF processing line in Circleville, Ohio. Two individuals will co-manage this new business and be responsible for securing funding (private, bank loan, grant) for capitalization and operating expenses. Rhoads Farm, Inc. will lease basic infrastructure (land, 3-phase electrical capacity, office space, dock space and refrigerated space) from their existing Cold Storage Facility to this new business and manage the processing line operations. Trellis Growing Systems will manage sales and marketing tasks and the food safety program. It is anticipated that Polter's Berry Farm will supply strawberries to the IQF facility and help procure berries from the network of farming colleagues while Mid-America Produce Safety Services will develop and help implement the food safety program. We anticipate that networking with our current marketing company will open new sales opportunities for our future line of frozen berry products. Finally, we expect to seek assistance from the Indiana Procurement Technical Assistance Center (PTAC), a resource partner of NE-SBDC, to help us navigate the USDA AMS commodity purchase program.

Overall, feedback from our partners has been very positive. The consensus is that the proposed freezing facility is economically viable and would significantly help local berry farms by creating a new marketing opportunity for their USDA #2 fruit.

7. Sharing Results: How will the project results be publicized and shared?
- To whom (people, entities) do you plan to publicize the results?
  - When did you, or do you expect, to publicize the results?  
\*If the results have been publicized, please send any publicity information (brochures, announcements, newsletters, etc.) electronically along with this report. Please do not mail items.

TGS posted the Economic Feasibility Study on the company website at [www.trellisgrowingsystems.com](http://www.trellisgrowingsystems.com) on March 31, 2019. A copy of the study is being sent with this final performance report to our designated AMS representative. In addition, the North American Raspberry and Blackberry Association (NARBA) and North American Strawberry Growers Association (NASGA) will be contacted to offer the project's story and results as a potential article for publication in their newsletters.

8. Feedback: Was feedback collected from your community and additional stakeholders about the project's work?  Yes  No
- If Yes, how was the feedback collected?
  - What feedback was received? (specific comments)

We have collected feedback from stakeholders. Of the 36 growers who completed our online survey, 88% said they would be interested in an annual contract to supply an IQF facility if the raw berry purchase price was reasonable. Also, potential buyers have verbally expressed an interest in procuring over 198,000 pounds of frozen local grown berries each year. This past season Rhoads Farm signed on as a blackberry grower for a prominent frozen berry distributor in order to become more familiar with the frozen berry industry. Through that association, per their Procurement Specialist, the frozen berry distributor showed very positive support for a local IQF facility in Ohio as they see a real need for one to serve local growers and they are looking to procure more berry blend products from the Ohio-Indiana-Michigan region.

9. Financials:
- The Final SF-425 is required to be submitted as part of the closeout procedures. Check the box if you have submitted the Final SF-425.  Final SF-425 Submitted
  - Was any program income generated?  Yes  No
    - If Yes, what amount of program income was generated?
    - If Yes, how was the program income used to further the objectives of the project?
  - Insert the total amount of **federal funds** from the Narrative's budget, and the amount of **federal funds** spent during the project's performance period in the table. DO NOT INCLUDE MATCH

Categories	Approved Budget Amount (\$)	Actual Federal Expenditures (\$)
Personnel:	28,116	28,114
Fringe:	0	0
Contractual:	5000	0
Equipment:	0	0
Travel:	1568	437
Supplies:	0	0
Other:	0	0
Indirect Costs:	3,468	2,552
<b>TOTAL:</b>	<b>38,152</b>	<b>31,103</b>

- d. LFPP ONLY: Insert the amount of **matching funds/in-kind contributions** from the Narrative’s budget, and the amount of **match** contributed during the project’s performance period.

Categories	Budget Amount – Match (\$)	Actual Match (\$)
Personnel:	12,717	10,369
Fringe:	0	0
Contractual:	0	0
Equipment:	0	0
Travel:	0	0
Supplies:	0	0
Other:	0	0
Indirect Costs:	0	0
<b>TOTAL:</b>	12,717	10,369

#### 10. Lessons Learned:

- a. Summarize the lessons learned. Please reflect on positive experiences (e.g. good ideas that improved project efficiency or saved money) and negative experiences (e.g. what did not go well and needed to be changed).

Communication between partners and stakeholders achieves more robust results when people meet in person or talk directly over the phone. Reliance on communication primarily through email slows project momentum and can also result in incomplete information gathering

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

Our 3rd objective was to “To develop new marketing opportunities for fruit farm operations serving local markets”. This objective was not fully achieved since this was a planning grant project. This objective will be included in our 2019 LFPP Implementation Grant proposal.

- c. Describe any lessons learned in the administration of the project that might be helpful for others who may want to implement a similar project.

Schedule contract work well in advance to prevent time conflicts. This project lost some time due to personnel changes which resulted in us getting behind in our schedule and not contacting a consultant in a timely manner. Consequently, we were not able to have our business plan validated by a private business with expertise in food manufacturing. We did utilize our local Small Business Development Center, though, and was able to have our business plan reviewed by a business professional. We were advised to include a more comprehensive discussion of the business relationship between TGS, Rhoads Farm, Inc. and Midwest Berry.

- d. Discuss if, and how, the results of this project can be adapted to other regions, communities, and/or agricultural systems.

The results of this project are adaptable to other regions, communities and agricultural systems that have enough local/regional specialty crop acreage to produce an adequate supply, both in terms of crop quality and volume, to support an economically practical IQF facility or other value-adding food processing facility. According to our results, the following are paramount to the sustainability of this type of local food enterprise:

- A. growers must get a fair price for their crop and be willing to commit to volumes through an annual contract

- B. processors must be able to source a consistent supply of high-quality product to sell product at a premium price, buyers must be willing to support local/regional food networks by paying a higher price for local products compared to cheaper imported products.

#### 11. Future Work:

- a. How will the project work be sustained and continue beyond this grant? In other words, how will you implement the results of your project's work to benefit future community goals and initiatives? Include information about community impact and outreach, anticipated increases in markets and/or sales, estimated number of jobs retained/created, and any other information you'd like to share about the future.

We expect to present the business plan for Midwest Berry IQF to select outside investors to secure necessary funding in the amount of \$145,000. We will also apply for a Local Food Promotion Program Implementation Grant to move forward with establishing an IQF facility in Circleville, Ohio to process Midwest blackberries, strawberries and berry blends. We estimate a need to purchase 670,000+ pounds of #2 fruit from berry growers within the Indiana and Ohio locale for processing. This will offer growers a significant opportunity to sell their #2 fruit for an anticipated price point averaging between \$2.00-\$2.50 per pound. Based on grower survey results, this price point is acceptable and would positively affect their farm's profitability.

The direct and indirect economic effect on Pickaway County is an important consideration of this study. According to the USDA Economic Research Service (ERS) "Food Access Research Atlas," much of Circleville is located in an area defined as "Low Income and Low Access." A new IQF facility will foster jobs creation in an area prone to poverty and it should help increase the economic value of both the city and Pickaway County. The facility would impact the Circleville community directly by creating an estimated 3 administrative positions and 8-10 seasonal hourly jobs with a combined personal income of \$250,000. Further, buying local food is estimated to have a multiplier effect of 1.4-2.6 on the economic activity in the local economy. The indirect potential economic impact on Pickaway County is a boost of \$3.5-\$6.4 million for the local economy based on yearly product sales of \$2.4-\$3.4 million

- b. Please provide recommendations for future activities and, if applicable, an outline of next steps or additional research that might advance the project goals.

Future activities, outside of this grant, will include: 1) applying for a LFPP Implementation Grant, 2) securing letters of intent to supply the IQF facility from local berry growers and 3) researching the USDA Farm to School grant program more thoroughly to determine if it would be practical to develop and market a line of frozen berry products geared towards children. Selling berry products to local school systems will support the USDA's Food and Nutrition Service Farm to School initiative and provide students will a very healthy food choice.