

Project #7: Dakota Hops

FINAL PERFORMANCE REPORT

AWARD YEARS 2016 FORWARD

A Final Performance Report must be received within 90 days after the end of the grant agreement. You are required to report on the administration of the agreement and each project approved within the agreement. The completed Final Performance Report will be posted to the AMS website.

FINAL PROJECT REPORT TEMPLATE

Final Performance Reports must illustrate the completion of each project within the grant agreement. Each project shall be outlined as separate project profiles. You will report on projects in the same order they were submitted in the approved application and subsequent amendments.

PROJECT INFORMATION

Project Title	Freezing Hops in the field to improve freshness and beer quality		
Recipient Organization Name:	Dakota Hops, LLC		
Period of Performance:	Start Date:	9/30/2020	End Date: 9/29/2022
Recipient's Project Contact			
Name:	Steve Polley		
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Email:	chibmyia@gmail.com		

PERFORMANCE NARRATIVE

PROJECT BACKGROUND

Provide enough information for the reader to understand the importance or context of the project. This section may draw from the background and justification contained in the approved project proposal.

The purpose of this grant was to utilize a self-contained trailer as a mobile processor that can process hops at individual hop farms, rather than returning to a central location for processing, thereby reducing the time needed to preserve the hops after harvest. The trailer was also intended to be used to transport the equipment between hop growing area in Oregon, Idaho, and Washington.

The trailer was not granted so we invested in a four barrel fermenter to increase production at our partner brewery and continued to harvest and freeze hops each September for Dakota Point Brewing, LLC who started brewing for the study early 2021 and selling the beer in their taproom. This allowed Dakota Hops and Dakota Point Brewery to regularly bring new brews to the taproom and other markets, receive valuable consumer input, and establish the production capacity to successfully increase consumption.

ACTIVITIES PERFORMED

Address the below sections as they relate to the entire project's period of performance.

The Study will continue to market our beer to beer retailers in the local Black Hills 5 county distribution area covered by the distributor for Dakota Point Brewing.

OBJECTIVES

Provide the approved project's objectives.

#	Objective	Completed?	
		Yes	No*
1	Continue gathering and processing frozen hops for beer quality testing and production	X	
2	Promote the use of frozen hops for brewing through expanded production	X	
3	Increase consumption of beer brewed with frozen hops using a fermenter to deliver regular and accessible craft beer for consumer tasting	X	
4			

**If no is selected for any of the listed objectives, you must expand upon this in the challenges and lessons learned sections.*

ACCOMPLISHMENTS

List your accomplishments for the project's period of performance, including the impact they had on the project's beneficiaries, and indicate how these accomplishments assist in the fulfillment of your project's objective(s), outcome(s), and/or indicator(s).

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
1	The purpose of this grant was to utilize a self-contained trailer as a mobile processor that can process hops at individual hop farms, rather than returning to a central location for processing, thereby reducing the time needed to preserve the hops after harvest. The trailer also would be used to transport the equipment between hop growing area in Oregon, Idaho, and Washington.	The request for a trailer was disallowed. As an alternative we processed hops for the 2021 & 2022 harvest at a central location. We have decided that for the 2023 harvest we will purchase hops and have them shipped overnight. Yes, still expensive, but it allows us to process hops on an extended basis and perhaps save some labor and transportation costs.
2	Conducted in-field hop freezing and tested spatial parameters by processing to develop supply of frozen hops for brewing. This process included grinding freshly harvested hops, freezing the ground hops mechanically, and packaging the frozen hops into one pound mylar bags for use in home or commercial brewing. This was accomplished using a ¾ ton flatbed truck as substitute for the disallowed trailer.	Objective 1 Continue gathering and processing frozen hops for beer quality testing and production
3	We worked with USDA to modify our project and procure a fermenter to increase beer production capacity and consistency.	Objective 2 Promote the use of frozen hops for brewing through expanded production Objective 3 Increase consumption of beer brewed with frozen hops using a fermenter to deliver regular and accessible craft beer for consumer tasting

#	Accomplishment or Impact	Relevance to Objective, Outcome, and/or Indicator
4	Successfully began brewing beer with frozen hops using the new fermenter installed at Dakota Point Brewing. The beer is served at their taproom.	Objective 2 Promote the use of frozen hops for brewing through expanded production Objective 3 Increase consumption of beer brewed with frozen hops using a fermenter to deliver regular and accessible craft beer for consumer tasting
5	Began marketing the beer through the Dakota Point Brewing taproom. Additional marketing outlets will be pursued under the 2021 Specialty Crop Block Grant. The brewery taproom was the primary outlet during the period of performance of this grant as the first batch of beer brewed using the fermenter was completed near the end of the award following purchase and installation of the fermenter in Summer 2022.	Objective 2 Promote the use of frozen hops for brewing through expanded production Objective 3 Increase consumption of beer brewed with frozen hops using a fermenter to deliver regular and accessible craft beer for consumer tasting

CHALLENGES AND DEVELOPMENTS

Provide any challenges to the completion of your project or any positive developments outside of the project's original intent that you experienced during this project. Also, provide the corrective actions you took to address these issues. If you did not attain an approved objectives, outcome(s), and/or indicator(s), provide an explanation in the Corrective Actions column.

#	Challenge or Development	Corrective Action or Project Change
1	From May 2021 to July 2022 Dakota Point Brewing brewed beer for the study using their equipment and a 2 barrel fermenter. A welcome start to be certain, but limited production.	Early summer 2022, we purchased a 4 barrel fermenter and installed it in the brewery allowing the brewery to brew for us on a full time basis. The first batch was released in July and the 2nd batch was released in September 2022. The brewery successfully sells some of our beer through their taproom and the balance is sold to local beer retailers. The study is responsible for retail sales because the brewery has no sales staff. We started marketing efforts August 2022.
2	We received notice of the Grant award in late July 2021, but the request for a trailer was disallowed in early 2022. Due to the disallowed expenses, project work was diminished and a change in scope and budget amendment was submitted in April 2022.	We were able, however, to successfully test spatial parameters by processing (IE. Grinding, forming, freezing, and packaging the hops) off of a flat-bed pickup which was smaller than the trailer requested. The processing was conducted at a central location near the commercial hop fields in Oregon.

#	Challenge or Development	Corrective Action or Project Change
		Although the substitution was successful, it was not desirable because of lack of working space and the inability to transport the processing equipment from hop farm to hop farm. Consequently, we requested an amendment to the grant to purchase a 4-barrel fermenter to add to the 2-barrel fermenter currently being used by Dakota Point Brewing, LLC to brew our beer. This will allow the brewer to brew beer consistently on a 4-barrel fermenter instead of five times a year on a 2-barrel fermenter.
3		
4		

LESSONS LEARNED

Provide recommendations or advice that others may use to improve their performance in implementing similar projects.

Partnering up with Dakota Point Brewing, LLC has been very beneficial to our study because it has been a Win-Win arrangement. The brewery makes a profit selling our beer through their taproom and the hop study benefits from having an established brewery conducting all of the brewing activities as well as helping with marketing and sales planning. We learned that we could more widely market frozen hops through an avenue to share them with consumers via a final value-added product (the beer served at the brewery) rather than just through the frozen hops and pucks we make, which are more for the commercial and home brewer audience.

CONTINUATION AND DISSEMINATION OF RESULTS (IF APPLICABLE)

Describe your plans for continuing the project (sustainability; capacity building) and/or disseminating the project results.

Having our own fermenter has significantly improved our ability to market beer brewed with frozen hops by allowing us to brew reliably and regularly instead of being subject to the time constraints and production planning of our partner brewery. Initial results have been met with great positivity from our brewer partner and taproom customers. This adaptation to the production side of our project will provide a significant boost to our marketing abilities beyond the period of this grant.

USDA granted Dakota Hops to permission retain and continue use equipment purchased under this project for the purpose originally approved under this federal award. The equipment, a four-barrel fermenter purchased with approval as special purpose equipment under USDA AMS award to SD DANR AM190100XXXXG031, subaward FY2019DH07, will continue to be used for the purpose originally awarded. USDA awarded funds to purchase this fermenter in order to increase production of beer brewed with frozen hops to test and promote the benefits of frozen hops for beer production, improve beer quality, and communicate results to brewers and consumers. The system was purchased and installed by Dakota Hops, LLC in the taproom of a supporting brewery, Dakota Point Brewing in Rapid City, South Dakota. System specifications and additional information can be found here: <https://conical-fermenter.com/4-BBL-Conical-Fermenter.html>.

The 2019 Specialty Crop Block Grant award to SD DANR, and subaward to Dakota Hops, LLC, concluded on September 29, 2022. The ongoing retention and operation of the acquired fermenter equipment has continued utility and benefits for both USDA AMS and Dakota Hops, LLC under the SCBG project awarded to Dakota Hops under the 2021 Farm Bill round of the SCBG program. The 2021 project focuses on testing new varieties of frozen hops through brewing trials in conjunction with additional breweries. Producing and testing samples of beer brewed with frozen hops and coordinating taproom testing with additional brewery partners is facilitated by the expanded production capacity Dakota Hops has through the new four-barrel fermenter. Continued operation of the fermenter by Dakota Hops will support ongoing achievement of the 2019 project's production-focused goals and facilitates accomplishment of the 2021 project's marketing-oriented objectives.

BENEFICIARIES

Number of project beneficiaries: We have no idea the exact number of people impacted by the Hop Program; however, we can provide non panel participants and promotional activities. The number would be in the low hundreds. Sales of beer brewed with frozen hops sold through the taproom for the last year of the study the number would be in the high hundreds. The number of brewery partners is one, although the project activities to begin actually brewing and marketing beer with frozen hops is critical to making possible the potential longer-term benefit to more breweries and home brewers as described in our application.

OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

Provide the results of the project outcome(s) and indicator(s) as approved in your application and project proposal. The results of the outcome(s) and indicator(s) will be used to evaluate the performance of the Program on a national level.

OUTCOME MEASURE(S)

Select the Outcome Measure(s) that were approved for your project.

- ☐ **Outcome 1:** Enhance the competitiveness of specialty crops through increased sales
- ☒ **Outcome 2:** Enhance the competitiveness of specialty crops through increased consumption
- ☐ **Outcome 3:** Enhance the competitiveness of specialty crops through increased access
- ☐ **Outcome 4:** Enhance the competitiveness of specialty crops through greater capacity of sustainable practices of specialty crop production resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources
- ☐ **Outcome 5:** Enhance the competitiveness of specialty crops through more sustainable, diverse, and resilient specialty crop systems
- ☐ **Outcome 6:** Enhance the competitiveness of specialty crops through increasing the number of viable technologies to improve food safety
- ☐ **Outcome 7:** Enhance the competitiveness of specialty crops through increased understanding of the ecology of threats to food safety from microbial and chemical sources
- ☐ **Outcome 8:** Enhance the competitiveness of specialty crops through enhancing or improving the economy as a result of specialty crop development

OUTCOME INDICATOR(S)

Provide the indicator approved for your project and the related quantifiable result. If you have multiple outcomes and/or indicators, repeat this for each outcome/indicator (add more rows as needed).

#	Outcome and Indicator	Quantifiable Results
1	2-2a Of the 40 total number of adults reached, 40 will gain knowledge about consuming frozen	The 58 responses from the taste panel, hundreds of tap room patrons, and

	hops as a specialty crop used in brewing beers.	miscellaneous others are all consistent in their responses: 1. There is no, or very little, aftertaste. 2. There is no, or very little, bitterness. 3. Beer brewed with frozen hops will amplify secondary taste in the beer that has strong hop presence.
2		
3		
4		

DATA COLLECTION

Explain what data was collected, how it was collected, the evaluation methods used, and how the data was analyzed to derive the quantifiable indicator.

Data was collected by the Grant Supervisor of taste panel participants in attendance on the last Saturday of each month for 18 months preceding February 2020. A vote was taken at the end of each session and the results were the same: the taste panel always preferred the beer brewed with the frozen hops.

FEDERAL PROJECT EXPENDITURES

EXPENDITURES

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel	\$5,040	\$5,040
Fringe Benefits		
Travel	\$3,429	\$2,108
Equipment	\$6,553	\$6,553
Supplies	\$4,179	\$5,634.72
Contractual		
Other	\$800	\$665.28
Direct Costs Sub-Total	\$20,001	\$20,001
Indirect Costs		
Total Federal Costs	\$20,001	\$20,001

PROGRAM INCOME (IF APPLICABLE)

Source/Nature (i.e., registration fees)	Amount Approved in Budget	Actual Amount Earned
1.		0
2.		
3.		
Total Program Income Earned		0

Use of Program Income

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

Dakota Point Brewing generates income through the sale of our beer in the tap room and retail sales, but this is proprietary data. We currently contribute the frozen hops and can labels. As we contribute more material (i.e., grain, yeast, cans) our share of the pie will grow. USDA has provided funds to expand these promotion activities under the 2021 Farm Bill round of the Specialty Crop Block Grant.

ADDITIONAL INFORMATION

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

We did not have any income (profit) from the Cambria product last year. We used the Unitank (fermenter) for the first brew in August 2022. The first beer from that fermenter was packaged in October 2022 after the end of the grant.