



AWARD YEARS 2021 AND PRIOR

This annual Performance Progress Report (PPR) must illustrate the progress made toward the completion of your project. If this project is completed at the time of the annual PPR submission, the project report should be marked as final. Please note character limits (abbreviated "char.") throughout.

PROJECT INFORMATION

Project Title (250 char.)	Marketing Trials for beer brewed with frozen hops
Organization Name (250 char.)	Dakota Hops, LLC
Project Start Date	10/01/2021
Project End Date	09/29/204

ORGANIZATION POINT OF CONTACT

Full Name	Steve Polley
Phone Number	605-642-7146
Email Address	dakotahopsllcsd@gmail.com

BACKGROUND INFORMATION

PROJECT PROGRESS

Please provide the total percentage of work completed on the project.	100%
Is this a final report? Please select the box to the right if the answer is "yes".	☐

PROJECT BACKGROUND (REQUIRED FOR FINAL REPORTS)

Provide enough information for the reader to understand the importance or context of the project and any key findings. This section may draw from the background and justification contained in the accepted project plan. As the project has been completed, write this section in past tense. If this is an annual report, please skip this section. (1200 char.)

The Dakota Hops, LLC study originally intended to determine whether hops preserved by post-harvest freezing could be effectively used to brew beer. Past Dakota Hops Specialty Crop Block Grant projects developed a process of cryogenic freezing that resulted in successful preservation of hop varieties for small scale brewing. This award built on the successes of previous projects, including a 2019 SCBG that included the purchase of a fermenter, by testing larger scale brewing of frozen hops in partnership with a contract brewer at a local microbrewery. While the concept of freezing, grinding, and processing hops into circular "pucks" for home brewing applications had been satisfactorily demonstrated, and previous brewing trials and taste panels pointed to a likable brewed end-product that consumers enjoyed, this project demonstrated the marketability of the product at scale through multiple rounds of brewing and sale of beer brewed with frozen hops in taprooms.

OBJECTIVE(S) (REQUIRED)

Please provide the approved project's objectives from the accepted project plan. Use the boxes to indicate if the objective is in progress, has been completed, or is not (and will not be) completed. At the final report, if "no" is selected for any of the listed objectives, you must expand upon this in the Challenges and Developments Section. Additional objectives may be added as needed.

+	#	Objective (2,000 char.)	Objective Completed?
-	1	Increase the number of craft breweries using frozen hops from 2 to 8	No
-	2	Leverage existing hop processing supplies and freezing mechanisms to ensure available hop supply for partner brewers and thereby available brewed product for an expanded test market through direct sales to brewery taproom customers.	Yes

OUTCOMES

Please only report on the outcomes and indicators that are selected and approved for this project. Use the check boxes to indicate which outcomes and indicators are selected. Select the "N/A" box for any indicators that are not applicable.

1. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH INCREASED SALES

☐

2. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH INCREASED CONSUMPTION

☐

3. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH INCREASED ACCESS AND AWARENESS

☒

Please provide the total number of consumers or wholesale buyers who access/produce/prepare/preserve specialty crops and select the applicable indicators for this reporting period.

Indicators	Value	N/A
1. Total number of consumers or wholesale buyers reached	2	☐
1.a. Of the total number in 1, enter the number that gained knowledge on how to access/produce/prepare/preserve specialty crops		☒
1.b. Of the total number in 1, enter the number that reported an intention to access/produce/prepare/preserve specialty crops	2	☐
1.c. Of the total number in 1, enter the number that reported supplementing their diets with specialty crops that they produced/preserved/obtained/prepared		☒

Please provide the total number of individuals reached and select the applicable indicators for this reporting period.

Indicators	Value	N/A
2. Total number of individuals reached		☒
2.a. Of the total number in 2, enter the number of adults that gained knowledge on how to access/produce/prepare/preserve specialty crops		☒
2.b. Of the total number in 2, enter the number that reported an intention to access/produce/prepare/preserve specialty crops		☒
2.c. Of the total number in 2, enter the number that reported supplementing their diets with specialty crops that they produced/prepared/preserved/obtained		☒

Please select the applicable indicators from the list and provide data on applicable existing delivery systems/access points of those reached that expanded and/or improved offerings of specialty crops for this reporting period.

Indicators	Value	N/A
3.a. Farmers markets		☐
3.b. Produce at corner stores		☐
3.c. School food programs and other food options (vending machines, school events, etc.)		☐
3.d. Grocery stores		☐
3.e. Wholesale markets		☐
3.f. Food hubs that process, aggregate, distribute, or store specialty crops		☐
3.g. Home improvement centers with lawn and garden		☐
3.h. Lawn and garden centers		☐
3.i. Other systems/access points, not noted		☐
3.j. Total (if not reported above)		☐

Please select the applicable indicators from the list and provide data on applicable **new** existing delivery systems/access points offering specialty crops for this reporting period.

Indicators	Value	N/A
4.a. Farmers markets		☐
4.b. Produce at corner stores		☐
4.c. School food programs and other food options (vending machines, school events, etc.)		☐
4.d. Grocery stores		☐
4.e. Wholesale markets		☐
4.f. Food hubs that process, aggregate, distribute, or store specialty crops		☐
4.g. Home improvement centers with lawn and garden		☐
4.h. Lawn and garden centers		☐
4.i. Other systems/access points, not noted		☐
4.j. Total (if not reported above)		☐

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 ☐

5. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH MORE SUSTAINABLE, DIVERSE, AND RESILIENT SPECIALTY CROP SYSTEMS ☐

6. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH INCREASING THE NUMBER OF VIABLE TECHNOLOGIES TO IMPROVE FOOD SAFETY ☐

7. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH INCREASED UNDERSTANDING OF THREATS TO FOOD SAFETY FROM MICROBIAL AND CHEMICAL SOURCES ☐

8. ENHANCE THE COMPETITIVENESS OF SPECIALTY CROPS THROUGH ENHANCING OR IMPROVING THE ECONOMY AS A RESULT OF SPECIALTY CROP DEVELOPMENT ☐

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

OUTCOME REMARKS (REQUIRED)

Please explain any quantifiable results, along with an update on their progress and data collection efforts for each of the outcomes and indicators selected in the accepted project plan. It is understood that the results may not yet be final at the time that this report is submitted; however, please provide an update on progress to date. If you do not have any data on the indicator(s) listed above, you must explain why in this section. (2,000 char.)

In coordination with USDA and SD DANR, Dakota Hops pivoted mid-grant from partnering with a contractor brewer at Dakota Point Brewing in Rapid City, SD to Sturgis Brewing in Sturgis, SD. Limited availability of hops and processing capacity, as well as the early stage of the large-scale frozen hop brewing proof of concept, prevented Dakota Hops from partnering with more than one brewer at a time. While only two commercial craft breweries brewed beer from frozen hops for their customers during this study, many new consumers were exposed to the product. Consumption increase was not a direct outcome focus of the grant but the reception to the product was highly encouraging. The partnership with Sturgis Brewing will continue into the future, and Dakota Hops has also formed a connection with a larger brewery that plans to bring beer brewed with frozen hops into the Phoenix, AZ market through one of their locations.

NARRATIVE

ACCOMPLISHMENTS (REQUIRED)

If this is an annual report, list your accomplishments for this reporting period. If this is a final report, your accomplishments should be cumulative and include all accomplishments previously reported on and updated to include activities conducted this past reporting period. Indicate how these accomplishments associated with each of your project's objective(s), outcome(s), and/or indicator(s). This listing should identify your project's partners and their contributions. Additional accomplishments can be added as needed.

+	#	Accomplishment (1,200 char.)	Related to (Objective/ Outcome)
-	1	Brewed beer with frozen hops through Dakota Point Brewing (years 1-2) [https://untappd.com/b/dakota-point-brewing-cambria/5008607] and Sturgis Brewing (year 3) https://untappd.com/b/sturgis-brewing-company-skullys-apa/5377223 , https://untappd.com/b/sturgis-brewing-company-skully-s-pale-haze/5892299 Image of beer with frozen hop production explanation: https://untappd.com/user/KyleDoesThings/checkin/1432525587	Objective 2, Outcome 3.1B

-		(Year 2) Sturgis Brewing Company recently completed a brewing trial comparing beer brewed with both kiln dried hops and frozen hops and the results were consistent with our test panel trials and resulted from Dakota Point trials. Beer brewed with frozen hops outsold its counterpart by about 30% by volume. Adam, the head brewer at the time Dakota Point Brewing made our beer transferred to Sturgis Brewing Co., in 2023. One of the first batches of beer was a 15 barrel batch that was split in 2 parts - 7.5 barrel batches - ½ brewed with kiln-dried hops and the other ½ brewed with our frozen hops which is currently being sold exclusively through their taproom. Although we sold 30 lbs of frozen hops @ \$10/pound we had no input on this trial. Adam was re-testing earlier results from Dakota Point Brewing on different equipment used at Sturgis Brewing. More contractual brewing is planned for 2024 but many questions will probably remain open until the end of the first batch. They are doing the marketing of the new beer and we are providing the hops.	Objective 1, Outcome 3.1B
---	--	--	---------------------------

CHALLENGES AND DEVELOPMENTS (REQUIRED)

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 reporting period. Also, provide the corrective actions you took to address these issues. If you did not attain an approved objective, outcome(s), and/or indicator(s), provide an explanation in the Corrective Actions column. For developments, you may put "N/A" under Corrective Actions. Additional challenges/developments may be added as needed.

+	#	Challenge or Development (1,200 char.)	Corrective Action
-	1	Harvest and processing inefficiencies. We are currently working on automating our freezing process, a system that now is very 18 th century. The Industrial Engineering Department of the South Dakota School of Mines and Technology has agreed to help us beginning January 2025.	Invest in processing improvements so that business can keep pace with increased demand now that the full beer production cycle has been studied and tested successfully.
-	2	Partnership with Dakota Point Brewing terminated due to misunderstandings over contractual obligations. Dakota Hops' relationship was primarily with the head brewer at Dakota Point, not the brewery owners. Dakota Hops and USDA worked on an amendment to the project's objectives and budget but ultimately decided to keep the budget in the initial form while expanding the proposal to include Sturgis Brewing and adding objective #2. A copy of the amendment is attached to this final report.	Dakota Hops initiated collaboration with Sturgis Brewing, which hired the former head brewer at Dakota Point. Development for Objective 1
-	3	(Year 2) No hops were harvested in the fall of 2023	Consequently the 2024 harvest will be larger than normal which fits our brewing schedule with Sturgis Brewing Co, but does present some issues using only manual processing equipment.

UPCOMING ACTIVITIES (REQUIRED FOR ANNUAL REPORTS)

Provide a description of the activities that you are planning to complete during the next reporting period. Additional activities can be added as needed. Please note, if this is a final report there should be no upcoming activities associated with the project, and this section should be left blank.

+	#	Activity (600 char.)	Anticipated Completion
---	---	----------------------	------------------------

-		A second phase of the hop study will focus on home brewers and beer clubs starting with South Dakota, Wyoming, and Colorado. Our product has worked for beer clubs before and there is additional market potential.	January 2025
-			

LESSON LEARNED (REQUIRED FOR FINAL REPORTS)

The recipient or subrecipient is required to provide recommendations or advice that others may use to improve their performance in implementing similar projects. If this is an annual report, please skip this section. (1200 char.)

Hops are sold commercially by dry weight (ie Brokers, breweries). It takes about 4 pounds of fresh vine hops to produce 1 pound of dry hops, but Dakota Hops, LLC sells 1 pound of vine hops as 1 pound of frozen hops which means less land is needed to grow hops to be frozen.

We discussed this with a few hop farmers but received no positive feedback.

It is important to have more clearly defined roles and responsibilities when engaging a contract brewer. Absence of a more formalized contract structure resulted in Dakota Hops providing the frozen hops and the fermenter while Dakota Point provided the other brewing ingredients as well as the space and expertise. However, Dakota Point did not share any of the revenue, resulting in Dakota Hops not obtaining a sustainable program income stream to fund the purchase of additional hops. This reduced the sustainability of the project and exacerbated the strain Dakota Hops experienced with the supply of hops available for the grant. As of the end of the grant, Dakota Hops' partnership with Sturgis appears promising but the exact parameters and responsibilities will be more fully developed following successful completion of more test batches.

CONTINUATION AND DISSEMINATION OF RESULTS (REQUIRED FOR FINAL REPORTS)

Describe your plans for continuing the project (sustainability; capacity building) and/or disseminating the project results. If this is an annual report, please skip this section. (1200 char.)

In house advertising with the brewery that brews our beer, and home brewers' beer clubs will be our first focus using modern media and personal contact. The beneficiaries number is derived from the Untappd.com check-ins to Dakota Point and Sturgis Brewing for beer brewed with frozen hops. We expect more promotional opportunities through this same venue.

PROJECT BENEFICIARIES (REQUIRED FOR FINAL REPORTS)

Provide the number of project beneficiaries. If this is an annual report, please skip this section. (12 char.)

450

FEDERAL PROJECT EXPENDITURE

EXPENDITURE (REQUIRED)

You must respond to at least one cost category. Please note, the subtotal and total rows include formulas to auto-calculate totals. The approved budget should come from the accepted project plan or any approved budget amendments.

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds Only)
Personnel	\$3,600.00	\$3,600.00
Fringe Benefits	\$0.00	\$0.00
Travel	\$4,506.00	\$4,712.46
Equipment	\$0.00	\$0.00
Supplies	\$6,794.00	\$6,588.98
Contractual	\$6,917.60	\$7,118.89
Other	\$0.00	\$0.00
Direct Costs Sub-Total	\$21,817.60	\$22,020.33
Indirect Costs	\$0.00	\$0.00
Project Expenditure Total Federal Costs	\$21,817.60	\$22,020.33

DISCUSSION OF EXPENDITURES (REQUIRED)

For 1st Annual Reports, if total project expenditures is less than 30 percent, and for 2nd Annual Reports, if total project expenditures is less than 60 percent, include a statement explaining how the grant funds will be expended and project activities completed as planned by the end date on the grant agreement. Any state approved budget amendments should be included here; Include the line item that the funds are coming from and going to and when the state approved the budget amendment. (1,200 char.)

DANR and USDA agreed to authorize Dakota Hops to submit reimbursement requests slightly exceeding the project budget to recoup costs associated with final travel expenses from the final trip to Idaho for hop harvest in August-September 2024. The State of South Dakota's award from USDA had sufficient unspent funds from other projects to cover the over-expenditure for Dakota Hops.

PROGRAM INCOME (IF APPLICABLE)

If program income was earned on the project, grant recipients are required to report on the source, amount, and how funds were expended. Program income is gross income --earned by a recipient or subrecipient under a grant --directly generated by the grant-supported activity or earned only because of the grant agreement during the grant period of performance. Program income includes, but is not limited to, income from fees for services performed; the sale of commodities or items fabricated under an award (this includes items sold at cost if the cost of producing the item was funded in whole or partially with grant funds); registration fees for conferences, etc.

+	Source/Nature of Program Income (100 char.)	Amount Approved in Budget	Actual Amount Earned
-	Sale of hops to contract brewers	\$0.00	\$1,023.16

USE OF PROGRAM INCOME (IF APPLICABLE)

Describe how the earned program income was used to further the objectives of this project during the performance period. Any income generated must be reinvested back into the project and not set aside or reserved for future expenses after the grant ends. (1,200 char.)

Reinvested in purchases of additional hops from hop farmers in Oregon and Idaho.

PPR ATTACHMENTS DESCRIPTION (IF APPLICABLE)

Grantors will rely on the data that is submitted in this form when they report to congress. However, if you think additional documents are necessary to support PPR, please attach them and provide a document name and description of document below.

+	Document Name	Document Description
-		