



Agricultural Marketing Service

U.S. DEPARTMENT OF AGRICULTURE

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.)	Apiaries in the Classroom: Educating South Dakota's Youth about Honey Production through Educational Beehives
Organization Name (250 char.)	Edmunds Central School District
Project Start Date	9/30/2021
Project End Date	9/30/2024

ORGANIZATION POINT OF CONTACT

Full Name	Spencer Cody
Phone Number	(605) 287-4251
Email Address	Spencer.Cody@k12.sd.us

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.)

Apiaries in the Classroom was a program that was implemented by the Edmunds Central School District that increased student and parent exposure to and consumption of locally-produced honey by developing a network of apiaries and supporting curriculum geared toward educating and providing opportunities to consume locally-produced honey for South Dakota students in PreK-12. Implementation occurred in three phases: phase one involved research and development during 2021-22 at Edmunds Central perfecting protocols and curriculum associated with operating apiaries in an educational setting and developing curriculum that highlights the importance and contribution that South Dakota's honey production industry had made in agriculture, phase two during 2022 involved the recruitment of 23 school districts willing and able to host an apiary consisting of two hives somewhere physically within their school district and the education of these 23 teachers at a South Dakota Honey Bee Education Institute that was held on the Edmunds Central campus, and phase three during 2023-24 involved the start up of the cohort apiaries and implementation of apiary-based curriculum in cohort schools.

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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	Develop protocols for teachers to implement education materials and activities concerning South Dakota honey production, pollination, and threats to South Dakota's honey industry including parasites, disease, toxins, and deceptive imitation honey marketing practices.	Yes
-	2	Train teachers to incorporate South Dakota honey production into the curriculum through the management of bee colonies using the protocols and curriculum refined and assembled during the research phase in the lead school district.	Yes
-	3	Implement an apiary in the lead school district in 2022 and 25 additional school districts throughout South Dakota in 2023 in order to further incorporate honey bee education into classroom curriculum.	Yes
-	4	Increase the consumption of locally-produced honey including the introduction of locally-produced honey for lunch programs.	Yes
-	5	Educate students about South Dakota honey production, pollination, and threats to South Dakota's honey industry including parasites, disease, toxins, and deceptive imitation honey marketing practices.	Yes
-	6	Promote the concept and benefits of incorporating honey production and pollination in science, ag, and nutrition education through presentations, exhibits, workshops, and published work.	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 ☒

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

Indicators	Value	N/A
1. Total number of children and youth	674	☐
1.a. Of the total number in 1, enter the number of children and youth that gained knowledge about eating more specialty crops	461	☐
1.b. Of the total number in 1, enter the number of children and youth that reported an intention to eat more specialty crops	444	☐
1.c. Of the total number in 1, enter the number of children and youth that reported eating more specialty crops	287	☐

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

Indicators	Value	N/A
2. Total number of adults reached	1,146	☐
2.a. Of the total number in 2, enter the number of adults that gained knowledge about eating more specialty crops	720	☐
2.b. Of the total number in 2, enter the number of adults that reported an intention to eat more specialty crops	583	☐
2.c. Of the total number in 2, enter the number of adults that reported eating more specialty crops	482	☐

Please provide the number of new and improved technologies and processes to enhance the nutritional value and consumer acceptance of specialty crops (excluding patents) for this reporting period.

Indicators	Value	N/A
3. Number of new and improved technologies and processes		☒

Please provide the number of new specialty crops and/or specialty crop products introduced to consumers this reporting period.

Indicators	Value	N/A
4. Number of new specialty crops and/or specialty crop products	16	☐

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	1,820	☐
1.a. Of the total number in 1, enter the number that gained knowledge on how to access/produce/prepare/preserve specialty crops	1,181	☐
1.b. Of the total number in 1, enter the number that reported an intention to access/produce/prepare/preserve specialty crops	562	☐
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	404	☐

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
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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

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

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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.)

All of the data collected was derived from 674 student pre-surveys and 259 student post-surveys. These were electronic Google Form surveys that were administered within participating classrooms before program implementation and then after the conclusion of program implementation. Each student survey asked questions about parent/guardian preferences and activities to collect data on adult consumers. For example, Outcome 2, Indicator 1 a-c compared pre- and post-survey data responses from participating classroom students in the program through self reporting. Outcome 2, Indicator 2 a-c compared pre- and post-survey data responses from participating classroom students in the program through self reporting, specifically on student perceptions of their parents or guardians. Additionally, for Outcome 3, Indicator 1 a-c, student consumer responses were combined with student perception responses of their parents or guardians. A standard 1.7 parent to student ratio was applied to demographics to generate a parent consumer number attached to our student data. Our surveys demonstrated measurable gains across the board for all of our indicators. Reported honey-product consumption rose from 12.3% to 20.1% among our student cohort or a 63% (Outcome 2 Indicator 1.C) increase in honey-product consumption during the course of this program. Among their parents the students reported that honey-product consumption rose from 17.3% to 23.4% or a 35% (Outcome 2 Indicator 2.C) increase in honey-product consumption. The number of new specialty crop products introduced to the cohort included: whipped honey (Adee Honey), spreadable honey (Adee Honey), honey in a squirt bottle (Adee Honey), melter's honey, onion honey, orange blossom honey, buckwheat honey, clover honey, golden rod honey, sunflower honey, alfalfa honey, crystallized honey, honey sticks, honey candy, honey sweetener, and woodland honey (Outcome 2 Indicator 4).

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	In year two we we successfully delivered 50 NUCS to 23 different schools throughout South Dakota to establish educational apiaries in 23 schools beyond Edmunds Central.	Objectives 1-6

-	2	In year one, two, and three, we did a number of statewide and local media stories concerning our program including this story from one of our cohort schools in McInstosh: https://www.kfyrtv.com/2023/10/26/science-class-creates-quite-buzz-small-sd-town/ https://www.dakotanewsnw.com/video/2022/08/12/teachers-attend-honey-bee-education-institute-roscoe/ https://www.ipswichtribune.com/story/2024/03/06/news/edmunds-central-hosts-pollination-institute-in-california/4053.html https://www.ipswichtribune.com/story/2024/03/27/news/edmunds-central-school-hosts-queening-institute/4103.html https://www.aideehoneyfarms.com/blogs/news/edmunds-central-learn-about-new-bee-colony-formation-in-mississippi https://www.aideehoneyfarms.com/blogs/news/edmunds-central-students-learn-about-pollination-in-california	Objective 5-6
-	3	In years one, two, and three, we developed methods and established contacts to aid schools in registering their hives with the state, serving raw honey in educational settings, and developing protocols for epi-pen implementation in their schools through providing training for epi-pen usage and connections to free epi-pen programs for schools. Schools were given language to adopt for epi-pen policies for those that did not have such policies and were then provided county health contacts for epi-pen training. Once cohort schools completed epi-pen training with their respective county health departments, their school district was eligible for the free epi-pen program through their county health departments and the EPIPEN4SCHOOLS Program. Cohort schools continued to receive free epi-pens each year as long as school staff completed epi-pen training with their county health departments.	Objectives 1-6
-	4	In year two we presented on the program at the South Dakota STEM Ed Conference in Huron in February of 2023.	Objective 6
-	5	In year two we presented on the program at the NSTA National Conference in Atlanta in March of 2023.	Objective 6
-	6	In years two and three we worked with the cohort to address hive management issues and logistical issues with incorporating apiaries in an educational setting.	Objectives 1-5
-	7	In year three we exhibited on the program at the Commodity Classic in Houston in February/March.	Objective 6
-	8	In year three we resupplied the educational apiary cohort with 30 NUCS dropping off bees throughout the state.	Objectives 1-6
-	9	In year three we hosted a team of federal officials from the Government Accountability Office in September. We spent the day reviewing our work with bees and specialty crops. This program was one of only four programs that received a site visit to investigate innovative STEM education funded by federal funding. The team also visited a school in Nevada, Maine, and Alabama. A report on their visit will be forthcoming.	Objective 6

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	In year two and three, cohort post-survey data lagged substantially behind pre-survey numbers despite many reminders.	We individually contacted cohort teachers for survey data and utilized the remaining materials budget as an incentive to cohort schools to continue to collect data and participate in program implementation.
-	2	In year three the NSTA National Conference in Denver was in March right after our teacher institute in Mississippi for colony queening.	We exhibited at the project at the Commodity Classic at the beginning of March of 2023, instead.
-	3	In year two and three, maintaining cohort schools by keeping them active in maintaining their educational apiaries was a challenge. In several instances we had to recruit replacement teachers/staff to continue the programs in their respective schools.	We worked with administration, current teachers, and incoming teachers to keep programs going. Additionally, we supplied another round of NUCS to help out schools that had lost their colonies.

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
-	1	Continued logistical support for educational apiaries will be provided.	2024 and beyond
-	2	Edmunds Central's apiary will be maintained indefinitely utilizing alternate funds to make purchases as needed.	2024 and beyond

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.)

We were able to save significant funds and do more with what funding we had because we were able to save on lodging through group lodging through Airbnbs instead of hotels. Additionally, we also had substantial savings from assembling our own hive boxes versus having them pre-built. Bees can be placed just about anywhere in any setting with proper precautions. Additionally, we were able to get cohort schools in a program to receive free epi pens each year.

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.)

We will continue to provide logistical support and advice to cohort schools in maintaining their educational apiaries. Additionally, we will continue to serve as a resource for anyone seeking information and help in starting an educational apiary in their school district. We will continue to work with schools to have raw honey served on school lunch lines across South Dakota. We will continue to maintain our educational apiary and will continue to serve our locally sourced raw honey for our school lunch program. The bulk of our focus will be to utilize the lessons learned from this program to develop and implement curriculum on commercialized bees for the FY 23 grant. What we are currently doing in that realm with education teachers and students all over the state commercialized bees would not have been possible without the relationship developed with Adeo Honey during this grant window.

PROJECT BENEFICIARIES (REQUIRED FOR FINAL REPORTS)

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

1,980

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	\$1,800.00	\$1,800.00
Fringe Benefits	\$0.00	\$0.00
Travel	\$49,780.42	\$47,626.38
Equipment	\$0.00	\$0.00
Supplies	\$43,187.49	\$45,661.53
Contractual	\$0.00	\$0.00
Other	\$3,593.00	\$3,273.00
Direct Costs Sub-Total	\$98,360.91	\$98,360.91
Indirect Costs	\$7,672.70	\$7,672.70
Project Expenditure Total Federal Costs	\$106,033.61	\$106,033.61

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.)

Supply expenses ended up being substantially less than anticipated due to our ability to bundle on supplies and assemble our own hive boxes. Our original budget estimate assumed that we would be able to buy assembled hive boxes and frames for our cohort institute in Roscoe. We were not able to purchase assembled hive boxes in the quantity needed for our institute; consequently, we were forced to order hive boxes and frames that required assembly. Additionally, our original budget proposal did not take into account additional savings made through equipment bundling versus buying pieces of equipment separately. Both strategies contributed to significant savings for the program. A formal amendment request was completed upon realization of these savings to reflect the changes. Those savings were needed to cover the amended increased travel expenses experienced post-COVID and from exhibiting at the Commodity Classic in Houston in year three. However, even with the budget amendment, we were slightly over budget on supplies due to higher-than expected costs involving our Commodity Classic exhibit and lower than expected costs concerning our lodging during the Commodity Classic.

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
-		\$0.00	\$0.00

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.)

NA

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 then and provide a document name and description of document below.

+	Document Name	Document Description
-		