Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

The State department of agriculture must include the following information once at the beginning of the State Plan.

RECIPIENT INFORMATION

State Department of Agriculture	New Mexico Department of Agriculture

STATE PLAN COORDINATOR

List the person at the State department of agriculture directly responsible for administering the grant program.

Coordinator Name	Felicia Frost
Title	Manager/Lead, Marketing & Sales (PI)
Phone Number	575-646-4929
Email	specialtycrops@nmda.nmsu.edu

OUTREACH TO SPECIALTY CROP STAKEHOLDERS TO IDENTIFY FUNDING PRIORITIES

States are encouraged to conduct outreach to specialty crop stakeholders to receive and consider public comment to identify state funding priority needs in enhancing the competitiveness of specialty crops prior to development of your request for proposals or applications.

OUTREACH TO IDENTIFY FUNDING PRIORITIES

Provide the steps you took to conduct outreach to identify funding priorities. Please include examples of the following: industry stakeholders asked to participate; the number and types of meetings or other outreach events conducted; and if any new outreach activities were explored. If outreach is conducted on specific time intervals within the state or territory (for example outreach to identify funding priorities is conducted once every 3 years) indicate N/A in this section, and complete the Outreach Not Conducted (If Applicable) section to explain the state's policy.

As part of the development of a revised strategic plan, strategic partners and industry representatives were invited to an all day planning session in November of 2023. During this time, feedback was received concerning NMDA's development activities.

Based on the planning session and NMDA 's experience with grant funding, funding priorities are not limited to specific topics or crops, however, project proposals are based on the following:
- Potential impact
- Potential return on investment for constituents and agricultural stakeholders
- Financial sustainability (i.e. the likelihood that a project will continue after federal funding has ceased)

The history of an applicant who has been funded in the past is also taken into consideration by the committee as they make their recommendations including but not limited to: timely invoicing history, reporting quality and timeliness, full execution of work plan, and proper record keeping procedures.

IDENTIFIED FUNDING PRIORITIES

Provide the funding priority needs identified through your outreach to specialty crop stakeholders. Please be sure to number the priorities in order of importance.

+	#	Funding Priority

-		N/A

OUTREACH NOT CONDUCTED (IF APPLICABLE)

If outreach was not conducted this fiscal year to identify funding priorities, provide an explanation why it was not conducted. Please include information on how the current funding priorities were identified, your policies and procedures, and when outreach for stakeholder input is next scheduled to occur.

(See details in previous section.) In general, NMDA has elected not to identify funding priorities based on specific topics or crops, because by not doing so, NMDA receives a broader selection of proposals to select from based on the above-mentioned criteria.

TARGETED OUTREACH TO UNDERSERVED AND BEGINNING FARMERS

State departments of agriculture are encouraged to perform outreach to interested parties, including underserved farmers and ranchers, new and beginning farmers or ranchers, veteran producers, and underserved communities, prior to the development and release of the State's request for proposals or applications, through a transparent process of receiving and considering public comment to identify State SCBGP funding priorities. The State department of agriculture should conduct this outreach to ensure that the grant applications it submits to the SCBGP have been developed with proven and justified public support. Refer to the Request for Applications (RFA) for further guidance on the definitions.

IDENTIFYING UNDERSERVED AND BEGINNING FARMERS

Describe the methods used to identify underserved and beginning farmers within your state or territory.

The methods used to identify and reach all New Mexico producers, including underserved and beginning farmers, are booths at all annual specialty crop related meetings/tradeshows, workshops conducted by NMDA staff (both scheduled and by request), materials distributed (summary of projects funded in previous three cycles, performance measures, proposal template, calendar of grant deadlines, etc.) to specialty crop related organizations as well as other service agencies, a press release, website and social media postings, and an updated animated video.

The following are examples of each:
• NM/Regional Chile, Pecan, and Wine Conferences
• Virtual Workshops (3 conducted, see schedule listed on the following page: https://www.elevatenmag.com/specialty-crop-block-grant-program/
•Materials distributed to:
  • NM Farmers' Marketing Association Members
  • NMSU Cooperative Extension Service Agents & NMSU as a whole
  • NM Chile Association
  • NM Chile Commission
  • NM Dry Onion Commission

Underserved and beginning farmers are part of the above mentioned groups, as many farmers in New Mexico fit within one or both of these criteria.

Additionally, through efforts with the Local Food Purchase Assistance program and Resilient Food Systems Infrastructure program, NMDA also targets underserved producers and utilizes site visits and outreach for these programs as a chance to inform producer participants of Specialty Crop Block Grant funding.

ENGAGING UNDERSERVED AND BEGINNING FARMERS

Describe the methods used to reach out to these groups to inform them about the SCBGP.

In addition to the methods listed above, NMDA's website and press releases are available in both English and Spanish to ensure accessibility of these materials by those who speak Spanish as their primary language.

OUTREACH NOT CONDUCTED (IF APPLICABLE)

If outreach was not conducted to underserved and beginning farmers, provide an explanation why it was not conducted.

N/A

COMPETITIVE REVIEW PROCESS

PROPOSAL SOLICITATION

Describe the methods you used to solicit proposals that met the identified specialty crop funding priority needs. Please include date range for the RFA process, along with any conferences, advertising, or other outreach activities conducted for this process.

- Press Releases (English/Spanish)
- NM/Regional Chile, Wine, & Pecan Conferences
- NM Agritourism Symposium
- Local Food Purchase Assistance Site Visits
- Virtual Workshops (3 conducted, see schedule listed on the following page: https://www.elevatenmag.com/specialty-crop-block-grant-program/
- Materials distributed to:
  - NM Farmers' Marketing Association Members
  - NMSU Cooperative Extension Service Agents & NMSU as a whole through the "Hotline" email publication
  - NM Chile Association
  - NM Chile Commission
  - NM Dry Onion Commission

GRANT PROPOSALS RECEIVED

Number of grant proposals received	12

APPLICATION REVIEW PANEL (ALL SECTIONS REQUIRED)

REVIEWER SELECTION

Describe how you selected reviewers to ensure the review panel consisted of technical experts from various fields, who were qualified and able to perform high quality and fair reviews.

The evaluation committee members are recommended by NMDA staff as well as past committee members and are approved by the New Mexico Secretary of Agriculture. There is no formal process, metrics, or mechanism as one is not needed at this time. Past recommendations have proven to be qualified, non-biased, and diverse in their professional expertise and background.

REPRESENTED FIELDS OF EXPERTISE

Provide the fields of expertise the review panel members represented (i.e., botanists, food nutrition experts, commodity association representatives, etc.).

This year, there were three members on the evaluation committee and their fields of expertise are as follows:
- Member 1—Agricultural Communications
- Member 2— Specialty Crop Production & Marketing
- Member 3—Production, Agritourism, & Agriculture Education

PREVENTING REAL OR PERCEIVED CONFLICT OF INTEREST

Describe how you documented and ensured reviewers were free from conflicts of interest (i.e., reviewers signed a conflict-of-interest statement).

All members of our evaluation committee completed and signed a conflict of interest form and NMDA keeps these forms on file.

SHARING THE RESULTS OF COMPETITIVE PROCESS WITH APPLICANTS

Describe how you will provide or did provide results of the peer review panel to the grant applicants while ensuring the confidentiality of the review panel members.

As part of all letters that are sent to all applicants, they receive a list of strengths and weaknesses as well as their average score. Upon request, NMDA shares all final and approved proposals, annual and final reports, and other related documents as they are considered public record.

COMPETITIVE PROCESS NOT CONDUCTED (IF APPLICABLE)

If you did not conduct a competitive grant process, provide an explanation as to why you did not, including a discussion of how projects were selected for funding.

N/A

OVERALL STATE PLAN BUDGET SUMMARY

Please ensure the total budget equals the State's available grant allocation and that the total indirect costs do not exceed 8 percent of your total grant request. Please number your Project Titles in sequential order beginning with 1 (for example, 1. Evaluating the effects of root rot fungicide treatments on shallow root vegetables.).

+	#	Project Title	Direct	Indirect	Total
-	1	Exploring the nutritional and medicinal profiles in fruit and seeds of jujubes in New Mexico	$59,528.00	$0.00	$59,528.00
-	2	Growing Red Bell Pepper and Roma Tomato Crops for Chili Processing Industry in New Mexico	$108,313.16	$0.00	$108,313.16
-	3	Integrating saffron into small vegetable production systems of New Mexico to enhance profitability and sustainability.	$78,837.80	$0.00	$78,837.80
-	4	Chickpea, a high value, low input specialty crop for New Mexico	$70,916.62	$0.00	$70,916.62
-	5	Increasing Awareness of NM Chile	$47,070.35	$0.00	$47,070.35
-	6	High Speed automated screening of aflatoxins in pistachios during harvesting and throughout crop processing	$103,667.00	$0.00	$103,667.00
-	7	Codling Moth Remediation through Organic Integrated Pest Management Techniques in an Historic Agua Fria Village Orchard	$81,341.29	$0.00	$81,341.29
Grant Administration			$45,623.84	$0.00	**$45,623.84**
Total					**$595,298.06**

STATE DEPARTMENT OF AGRICULTURE OVERSIGHT

If you are using grant funds for direct administration of the grant agreement, provide the start and end dates for the use of these funds and a budget breakdown by year. Budget Breakdown by Year Chart

Start Date 09/30/2024

End Date 09/29/2027

Year 1	Year 2	Year 3	Total
$21,863.78	$11,880.03	$11,880.03	$45,623.84

GRANT ADMINISTRATION BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with administration expenses for the SCBGP. Applicants should review the RFA section on Funding Considerations prior to developing their budget narrative.

AMS encourages all grant recipients to include the grant administrative funds in their budget narrative, which can be used for costs such as monitoring subrecipients, ensuring grant recipient and subrecipient compliance with regulations and requirements, and grant management training. Grant recipients are encouraged to conduct periodic site visits to review project accomplishments and monitor progress, to review financial and performance records, organizational procedures, and financial control systems and to provide technical assistance to subrecipients as required. These recommended site visits are meant to support accountability, compliance with regulations and requirements, and achievements of subrecipients.

Please review previous State Plans to ensure that you are not requesting grant administration costs for the same activities for the same period as previously awarded. The Specialty Crop Block Grant Program (SCBGP) will not fund duplicative costs. Total award administrative costs, defined as indirect costs, are limited to 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), Farm Bill, as amended by section 10107 of the Farm Bill.

Budget Summary	
Expense Category	**Funds Requested**
Personnel	$26,205.95
Fringe Benefits	$9,434.14
Travel	$0.00
Equipment	$0.00
Supplies	$0.00
Contractual	$9,983.75
Other	$0.00
Direct Costs Sub-Total	**$45,623.84**
Indirect Costs	$0.00
Total Budget	**$45,623.84**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. Refer to the RFA sections Presenting Direct and Indirect Costs Consistently; and Allowable and Unallowable Costs and Activities for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Felicia Frost, Manager/Lead Marketing & Sales (PI)	*	$14,382.31

-	2	Alyssa J. Pearson, Marketing Specialist, Intermediate	*	$5,453.71
-	3	Desiree Stephens, Program Coordinator	*	$6,369.93
Personnel Subtotal				**$26,205.95**

PERSONNEL JUSTIFICATION

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary. If the salary/position of the person responsible for the grant isn't being paid with SCBGP funds, please include their name and provide their job description.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

*FTEs are omitted as NMDA prefers not to disclose salaries of individuals in this context. NMDA/NMSU utilizes an online "Electronic Effort Certification" system for monitoring and acknowledging efforts associated with sponsored projects (grants). More information can be found at https://drive.google.com/file/d/1vOonZaC70Vq6dMWAR8r9_tOYUvRPR338/view?usp=sharing

Felicia Frost, Manager/Lead, Marketing & Sales, will serve as the PI and provide general program oversight.

Alyssa J. Pearson, Ag Marketing Specialist, will be a liaison/coordinator between USDA-AMS, NMSU, NMDA and all sub-recipients as well as the public in terms of outreach, etc. She will also initiate revisions, amendments (as needed), reporting, etc.

Desiree Stephens, Program Coordinator, will be responsible for the administrative responsibilities such as, but not limited to, assisting with the drafting of formal communications, coordination of meetings, assisting with outreach, initial review of invoices and backup documentation, sending reminders, managing electronic files, etc.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Felicia Frost **(Note: FB rates for NMSU/NMDA are likely to change after July 1, 2024 to 38.5%. This overall admin budget has been decreased by less than $2,000 below the allowable 8% in anticipation of the future FB rate increase as well as a potential increase to NM's allocation at the time the NOA is sent. The higher FB rate will potentially impact the NMSU-related projects as well.)**	36.0% (*Current rate)	$5,177.63
-	2	Alyssa J. Pearson	36.0%	$1,963.34
-	3	Desiree Stephens	36.0%	$2,293.17
Fringe Subtotal				**$9,434.14**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. Refer to the RFA section on Allowable and Unallowable Costs and Activities, Travel and Foreign Travel topics for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-		N/A						
Travel Subtotal								

TRAVEL JUSTIFICATION

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use TBD. If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

N/A

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. "Special purpose equipment" is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. Refer to the RFA section on Allowable and Unallowable Costs and Activities, Equipment - Special Purpose for further guidance. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed later in that section.

Rental of "general purpose equipment" must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. Refer to the RFA section on Allowable and Unallowable Costs and Activities, Equipment - General Purpose and Rental or Lease Costs of Buildings, Vehicles, Land and Equipment for further information.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-		N/A			
Equipment Subtotal					

EQUIPMENT JUSTIFICATION

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allowability criteria for each equipment item as indicated in the most recent version of the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

N/A

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. Refer to the RFA section on Allowable and Unallowable Costs and Activities, Supplies and Materials, Including Costs of Computing Devices for further information.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-		N/A				
Supplies Subtotal						

SUPPLIES JUSTIFICATION

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

N/A

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately. Create a new line for each contractor/consultant.

Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/ Flat Rate	Rate Value	Funds Requested
-	1	Submittable	Flat Rate		$9,983.75
Contractual/Consultant Subtotal					**$9,983.75**

CONTRACTUAL JUSTIFICATION

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA sections referring to the Allowable and Unallowable Costs and Activities, Contractual and Consultant Costs for acceptable justifications. If the Contractor has not yet been identified or is still to be determined (TBD), please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

Contractual 1: Submittable-- NMDA currently has a contract with a firm called Submittable that serves as our grant management platform for the purposes of proposal management, invoicing, amendment requests, and reporting. The NMDA Marketing & Development Division will be splitting the overall cost with another division as it is less expensive to do so. Currently, NMDA's contract and purchase order with Submittable is approximately $30,000 annually. We estimate that approximately 1/3 of the total cost of the new contract to be signed in Fall of 2025 will be charged to this SCBGP cycle to cover one year. NMDA will continue to include this expenditure in future SCBGP applications so that the cost is spread out among the active cycles being managed in Submittable.

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-		N/A				
Other Subtotal						

OTHER JUSTIFICATION

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals, the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

N/A

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives “which”, cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA sections referring to the Limit on Administrative Costs and Presenting Direct and Indirect Costs Consistently for further guidance.

Indirect Cost Rate	Funds Requested

	$0.00
Indirect Subtotal	**$0.00**

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico State University
Organization Contact Name	Shengrui Yao
Phone	505-852-4241
Organization Email	yaos@nmsu.edu
Organization Fax	n/a

Mailing Address

Street: 371 County Road 40 PO Box 159

City: Alcalde State: NM Zip: 87511

PROJECT TITLE

Exploring the nutritional and medicinal profiles in fruit and seeds of jujubes in New Mexico

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

New Mexico State University will investigate the nutritional and medicinal components of fruit and seeds of jujube germplasm (Ziziphus. jujuba cultivars and Z. spinosa trees) from New Mexico and El Paso, TX. Jujube has nutritious fruit with medicinal effects and used commonly as traditional Chinese herbs for its dry fruit and seeds (Z. spinosa). There have been several studies on jujube nutritional parameters. With the recent development in metabolomics, hundreds of metabolites will be detected at the same time. We will compare the nutritional/medicinal component profiles of different jujube cultivars and germplasm trees for their fruit and seeds (germplasm only). These data will be used as baseline for educating the public, value-added product development and marketing promotion, nutritional supplements, or medicinal/pharmaceutical product exploration.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

Jujube, also called Chinese date, originated from China and has been cultivated there for over 4000 years. Although jujube cultivars had been imported in the U.S. for more than 100 years, it hasn't been grown into a reasonable industry. Many factors constrain jujube production, but lack of knowledge of growing habits, and fewer commercially available cultivars and limited plant supply play important roles. We have collected 60 jujube cultivars with 30+ cultivars imported directly from China. With continuous support of Specialty Crop Block Grant Program (NMDA), we conducted fundamental studies including cultivar blooming types, tree growth and fruiting habits, and pollen germination. Then we established long-term cultivar trials at three locations with different USDA cold hardiness zones in New Mexico in 2015-2017. So far, all jujube cultivars including fresh eating and drying cultivars from early to late maturation performed the best in southern New Mexico at Las Cruces, they also did well in central New Mexico at Los Lunas except very late drying cultivars. While for northern New Mexico at Alcalde, jujube is the only tree fruit species that produce reliable crop in late frost prone northern and central New Mexico, but growers should be selective with cultivars due to short growing seasons. Based on these results, we recommended 5-8 cultivars for each regions. Now the NMSU jujube program takes a leading role in jujube research and extension in the US.

Since most jujube cultivars in US were imported from multiple countries, their origin sources are complicated (Yao, 2013). No one was formally released. Duplicates, renaming, mislabeling and synonyms are common. This brought great inconveniences to growers. Now, with the help of Dr. Zhang at USDA ARS, we finished the jujube cultivar and germplasm genotyping with single nucleotide polymorphism (SNP) markers. This is the first jujube genotyping report in the US: one published in Plants in 2023 and the other will be published soon in Journal of American Society of Horticultural Sciences soon. Cultivars mislabeling, renaming and synonyms were identified, their genetic relationship were clustered and similar cultivars were classified into groups. Researchers and growers would have much better ideas about jujube cultivars and can use the results to guide their cultivar identification/selections.

Jujube fruits are very nutritious. They are rich in vitamin C and cyclic adenosine monophosphate (cAMP). Its vitamin C content is 4-12 times higher than citrus (Huang et al. 2017) and its cAMP content was the highest among 200 plant species tested. As a dietary supplement, jujube fruit is also well recognized as a healthy food which contains a variety of bioactive substances, such as terpenes, polysaccharides, polyphenols, amino acids, nucleotides, dietary fiber, alkaloids, and other nutrients. These nutrients and non-nutritive phytochemicals in jujube fruit make the fruit have many health/medicinal properties including but not limited to antioxidant, anti-cancer, anti-insomniac, antimicrobial, anti-inflamatory, neuroprotective, cardioprotective, immunoregulatory and hepatoprotective activities. However, there is very limited research in the US. To fully use jujube fruit and seeds (Z. spinosa) for its nutritional and medicinal functions, it is critical to know their full metabolomic profiles.

We have studied the vitamin C, total phenols, antioxidant, cAMP, and proanthocyanidins. We only covered limited cultivars and nutritional compounds with titration methods and high-pressure liquid chromatography. Metabolomics is the large-scale study of small molecules, commonly known as metabolites, within cells, biofluids, tissues or organisms. With the technological advances, metabolomics is gaining prevalence not only in the medical field but also in plants. We plan to utilize metabolomics technology to examine the jujube fruit nutritional/metabolomics profiles. With limited support, we sampled 12 jujube cultivars from three locations for metabolomic study from Sept to early October 2022. There were over 1300 metabolites detected and the data demonstrated strong cultivar effects and functioned as cultivar fingerprints. With this promising data, we plan to expand the metabolomic study to include more cultivars (fruit) and unique germplasm (fruit/seeds). This study will provide solid foundations to fully evaluate jujubes in New Mexico and Tornillo/Fabens, TX. The outcomes of this study will function as baseline for educating the public, value-added product development and marketing promotion, nutritional supplements, or medicinal/ pharmaceutical product exploration. The data also guide the breeding of new jujube cultivar with more functional ingredients.

Reference

Yao, S, Sapkota, D, Hungerford, J.A, Kersten, R.K. (2023). Jujube Fruit Metabolomic Profiles Reveal Cultivar Differences and Function as Cultivar Fingerprints. MDPI– Plants, 12, 2313. https://doi.org/10.3390/plants12122

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	Evaluate the nutritional/medicinal (metabolomic) component profiles of 20 jujube cultivars in New Mexico
-	2	Explore the metabolomic profiles of fruit and seeds of jujube germplasm (Z.spinosa) at NMSU campus and Tornillo/ Fabens, TX.
-	3	Disseminate the results to growers through NM Fruit Growers Workshop, NMSU jujube website and social media.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries. 30

Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	Yes

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

This proposal is a new project, but it is based on the following three previous projects:

2015 SCBGP: Jujube cultivar evaluation, selection and promotion in New Mexico
2018 SCBGP: Jujube cultivar trials and marketing in New Mexico
2020 SCBGP: Characterization, genotyping and uses of jujube cultivars/germplasm in New Mexico
We also have an on-going 2022 SCBGP jujube cultivar selection project:
2022 SCBGP: Jujube cultivar selection through open-pollinated progenies

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

This project itself is a new project, not a continuation of an existing project but it is based on our previous SCBGP projects especially the long-term jujube cultivar trials at Alcalde, Los Lunas and Las Cruces (Leyendecker) Centers and the jujube genotyping with single nucleotide polymorphism markers. This project will investigate the nutritional and medicinal components in jujube fruits. The long-term jujube cultivar trials (2015+2018 SCBGPs) proved the suitability of jujube production in New Mexico especially southern and central New Mexico. This ensures that we will have jujube fruits from different locations. The jujube genotyping project had identified and classified jujube cultivars, eliminated mislabeling and synonyms and identified a unique jujube population in Tornillo/Fabens that we can use their fruits/seeds for metabolomics analysis. The proposed new project will explore the nutritional/medicinal component profiles of different jujube cultivars through metabolomics, it also examines the metabolic profiles of fruit and seeds of unique jujube germplasm to find the cultivar-specific functional metabolites.

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

Based on the long-term jujube cultivar trial data (2015+2018 SCBGPs), it proved the jujube suitability in New Mexico and we recommended 5-8 top performing jujube cultivars for southern, Central and northern New Mexico, respectively. The jujube genotyping project identified renaming, mislabeling and synonym cultivars. It showed the genetic structure of all jujube cultivars and classified similar jujube cultivars to groups and confirmed a unique jujube population near Tornillo/Fabens, TX.

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

The jujube cultivar trials were affected by bird damage to fruit of young trees and the Covid-19 pandemic. The yield data collection was less affected since it happened in open space. The marketing part was affected since face-to-face gathering was prohibited during the

pandemic; and no survey was allowed in the grocery stores. The research work of a graduate student was also delayed by Covid-19 pandemic. Now, the bird damage still exists but it is a much smaller portion as trees mature and produce more fruit now. Since this project only needs 20-30 fruit per cultivar, bird damage has no effect on this project. The pandemic is not a problem now, and that graduate student had successfully defended, and two papers were published from his data in 2023.

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

Unexpected events do happen like the Covid-19 pandemic. We will leave some flexibility in time for potential unexpected events.

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

This project will be a research grant for three years that it cannot become self-sustaining within this period.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

This jujube fruit and seed nutritional/medicinal component study project will reveal the full spectrum of metabolite components which will be valuable information to educate growers and customers and guide their cultivar selections. It will also be critical as marketing points for its nutritional value. Food processing companies or medicinal/ pharmaceutical researchers and companies could use the data as baseline for product development.

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☐

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ☐

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ■

Indicators	Value	N/A
6.1 Number of research goals accomplished		■
6.2 For research conclusions, the number that:		■
6.2a Yielded findings that supported continued research		■

Indicators	Value	N/A
6.2b Yielded findings that led to completion of study		■
6.2c Yielded findings that allow for implementation of new practice, process or technology		■
6.3 Number of industry representatives and other stakeholders who engaged with research results		■
6.4 Total number of research outputs published to industry publications and/or academic journals, and for each published research output, the:	1	☐
6.4a Number of views/reads of published research/data	1,000	☐
6.4b Number of citations counted		■

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ☐

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

The outcomes and indicators are relevant but I expect 1-2 papers from this proposed project since we only can select 1 or 2, not 1-2.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

Outcome 6, indicator 6.4a:
For future papers, some journals directly list viewer numbers.
For workshop presentation, we will do a survey for participants knowledge increase in jujube nutrition.
For posting future papers in social media, we will use the statistic part for numbers of post reach and view/download.
For NMSU jujube website https://jujube.nmsu.edu/ we will post the papers there once it is published, even though we cannot check the number of viewers now. The NMSU jujube website serves as a one-stop shop for jujube growers/enthusiasts.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested

Personnel	$13,000.00
Fringe Benefits	$2,535.00
Travel	$8,108.30
Equipment	$0.00
Supplies	$784.70
Contractual	$28,000.00
Other	$7,100.00
Direct Costs Sub-Total	**$59,528.00**
Indirect Costs	$0.00
Total Budget	**$59,528.00**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Molecular lab technician (temporary)	$25/hr, 80hr/yr, 2 years	$4,000.00
-	2	Field technician (temporary)	$15/hr, 10hr/wk, 20 wk/yr, for 3 yrs	$9,000.00
Personnel Subtotal				**$13,000.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: Molecular lab technician: Temporary labor for sample processing, at $25/hr, 80hr/yr for two years with total of $4000.

Personnel 2: Field technician: temporary labor for routine jujube plot management like irrigation, weeding, fertilizing and mowing at Los Lunas: $15/hr, 10hr/wk, 20wk/yr for 3 yrs with total of $9000.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Molecular lab technician **(Note: FB rates for NMSU are likely to change after July 1, 2024 and therefore there may be overages in this budget category reported in the future. Funds from other budget categories may be utilized to cover the overages of the increase in FB, without going over the total budget and while still adhering to the AMS Grant Terms and Conditions).**	19.5	$780.00
-	2	Field technician	19.5	$1,755.00
Fringe Subtotal				**$2,535.00**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Alcalde, NM to Las Cruces, NM	mileage	miles	650	$0.67	4	$1,742.00
-	2	Alcalde, NM to Las Cruces, NM	hotel	nights	1	$107.00	4	$428.00
-	3	Alcalde, NM to Las Cruces, NM	meals	days	2	$44.25	4	$354.00
-	4	Alcalde to El Paso, TX/Las Cruces, NM	mileage	miles	800	$0.67	2	$1,072.00
-	5	Alcalde to El Paso, TX/Las Cruces, NM	hotel	nights	1	$107.00	4	$428.00
-	6	Alcalde to El Paso, TX/Las Cruces, NM	meals	days	2	$44.25	4	$354.00

-	7	Alcalde, NM to Los Lunas, NM	mileage	miles	240	$0.67	6	$964.80
-	8	Alcalde, NM to Los Lunas, NM	meals	days	1	$44.25	6	$265.50
-	9	ASHS annual meeting	airfare, hotel, per diem		1	$2,500.00	1	$2,500.00
Travel Subtotal								**$8,108.30**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Trip 1,2,3: Alcalde, NM to Las Cruces, NM: Fruit sampling trip, twice per year in 2024 and 2025.

Trip 4, 5,6,: Alcalde, NM to Las Cruces, NM/Tornillo, TX: jujube germplasm fruit and seed sampling trip: Once per year in 2024 and 2025 (time will be different than fruit sampling trip). These trips will be two person/one vehicle trips since the fruit and seed sampling of wild jujube trees is more time consuming than cultivar trees. So, the costs of hotel and meal parts are for two travelers.

Trip 7 and 8: Alcalde, NM to Los Lunas, NM: Fruit sampling trip, twice per year for two years. And once per year for two years pruning trip.

Trip 9: ASHS annual meeting: will attend ASHS annual meeting once to present the data in 2026 and $2500 is a bulk cost estimate since ASHS annual meeting changes locations each year.

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. “Special purpose equipment” is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of “general purpose equipment” must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					

Equipment Subtotal	

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Cooler	$60.00	1	10/2024	$60.00
-	2	Sampling bags	$74.70	1	10/2024, 9/2025	$74.70
-	3	15ml centrifuge tube	$200.00	1	10/2024	$200.00
-	4	Liquid nitrogen	$75.00	4	10/2024, 9/2025	$300.00
-	5	Mortar/pestle	$50.00	3	10/2024	$150.00
Supplies Subtotal						**$784.70**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supply 1: Cooler for sample storage and transportation
Supply 2: Sampling bags for sample storage and sub-sampling.
Supply 3: 15ml centrifuge tubes for sample storage after grinding in deep freezer.
Supply 4: Liquid nitrogen to freeze samples and make them crispy during grinding process.
Supply 5: Mortar/pestle to grind samples to powder with liquid nitrogen.

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-	1	Jujube cultivar metabolomic analysis	Flat Rate	$16,000.00	$16,000.00
-	2	Germplasm fruit and seed metabolomic analysis	Flat Rate	$12,000.00	$12,000.00
Contractual/Consultant Subtotal					**$28,000.00**

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

Contractual 1: Jujube cultivar metabolomic sample analysis (Metware Biotechnology Inc.): $200/sample, 80 samples with total of $16,000.
Contractual 2: Jujube germplasm fruit and seed metabolomic analysis (Metware Biotechnology Inc.): $200/sample, 60 samples, with a total of $12,000.

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Publication fee	$2,500.00	2	2025/2026	$5,000.00
-	2	Shipping cost	$100.00	3	2024, 2026	$300.00
-	3	Leyendecker center field management	$30.00	60	2025-2027	$1,800.00
Other Subtotal						**$7,100.00**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

Other 1: We expect to publish 1-2 papers out of this project with roughly $2500 each.
Other 2: Shipping cost is FedEx cost for shipping frozen samples with dry ice, two packages in 2024 and one in 2025.
Other 3: Labor cost for the NMSU Leyendecker jujube plot irrigation, mowing, and fertilization: $30/hr, 20hr/yr, for 3 years.

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested
Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico State University Rex E. Kirksey Agricultural Science Center-Tucumcari
Organization Contact Name	Murali Darapuneni
Phone	575-461-1620
Organization Email	dmk07@nmsu.edu
Organization Fax	N/A

Mailing Address

Street: 6502 Quay Rd. AM 5

City: Tucumcari State: NM Zip: 88401

PROJECT TITLE

Growing Red Bell Pepper and Roma Tomato Crops for Chile Processing Industry in New Mexico

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

A group of researchers at New Mexico State University will conduct a multidisciplinary research a) to evaluate the growth and yield potential of red bell pepper and roma tomato crops in the Eastern New Mexico b) to enhance the NM red bell pepper and roma tomato production capacity through discovering an alternate water supply strategy that utilizes treated municipal wastewater as a water source. The research results will be disseminated to small-scale vegetable producers through stakeholder meetings which will potentially help the producers to diversify the crop and water portfolios and reduce the burden of high economic costs and drought risk in the chile and tomato production.

The research group is a coalition of local producers, farmer cooperative organizations, and New Mexico State University researchers and extension personnel.

Research Personnel:

Dr. Murali Darapuneni (PI)- NMSU Rex E. Kirksey Agricultural Science Center-Tucumcari, NM. Evaluating red bell pepper and tomato crop growth, soil effects, overseeing data collection, and writing reports.

Mr. Leonard Lauriault (Co-PI)- NMSU Rex E. Kirksey Agricultural Science Center-Tucumcari, NM- Wastewater effects on crop growth.

Dr. Marisa Thompson (Co-PI)-NMSU Agricultural Science Center-Las Lunas, NM- Expertise on researching horticultural crops, and extension.

Dr. Xiufen (Sophia) Li (Co-PI)-NMSU Department of Plant and Environmental Science, Las Cruces, NM- Expertise on soil microbiology.

Dr. Willis Fedio (Co-PI)- NMSU Department of Food and Consumer Sciences- Expertise on food safety.

Research Assistant (TBD)- NMSU Rex E. Kirksey Agricultural Science Center-Tucumcari, NM- Data collection and overseeing the trial management.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

Red bell pepper (Capsicum annuum L. var. grossum) and Roma tomato (Solanum lycopersicum L.) have potential to be a new cash crop option for small-scale producers in New Mexico. These two crops, if grown successfully in NM, can have tremendous impact and opportunities in expanding the state's chile processing industry. In 2022, small acreage of chile (all types) and no tomato acreage was reported in NM (National Agricultural Statistics Service survey, 2022.). Due to great market demand of red bell peppers and tomatoes in NM, these two commodities are usually imported from the other parts of the US, Mexico, and overseas. Therefore, costs associated with the logistics and transportation cause an inflation in red bell pepper and tomato commodity prices to the NM consumers. Given the significant need and importance, growing red bell pepper and Roma tomato crops locally has greater benefit to NM agricultural productivity and economics. However, one of the major constraints for growing pepper and tomato production in NM is lack of a consistent supply of water. To mitigate the water problem, New Mexico local small-scale producers could potentially use treated municipal wastewater (classes 1B and 2) as an irrigation source for producing locally-grown food crops, especially red bell pepper and Roma tomato, if appropriate research-based recommendations are developed. New Mexico State University, and the Rex E. Kirksey Agricultural Science Center at Tucumcari, in particular, are uniquely positioned to advance research and adoption of treated municipal wastewater as an alternative agricultural irrigation source in water stressed localities. This project proposes to grow red bell pepper and Roma tomato crops using treated municipal wastewater as an irrigation source. The research specifically compares production capacity and management of four prominent varieties of red bell pepper and Roma tomato irrigated with treated municipal wastewater and traditional surface, ground, and/or potable water resources. Varieties within each crop will be replicated four times in a randomized complete block design.

Although treated municipal wastewater is currently used for limited agricultural and animal operations (irrigation of turf and livestock feed crops and livestock watering), there is an unmet potential of treated wastewater to support local small commodity food production. However, expanding efforts for reuse of municipal wastewater for food crops requires interdisciplinary research focusing on the multi-dimensional aspects of environmental, crop, and food safety, such as potential environmental pollutants (excessive macro and micro plant nutrients and heavy metals), and human pathogens (E.coli, Salmonella, etc.).

Project Goals:

a. Enhancing the local production and processing capability of NM chile industry by growing red bell peppers and roma tomato crops by leveraging existing resources such as treated wastewater, NMSU's research facilities and infrastructure, and NMSU's expertise to develop novel and innovative crops to address the production gaps in the food and water security.

b. Reducing pressure on demand for conventional potable, surface, and groundwater supplies by providing alternate water resources for red bell pepper and tomato production.

c. Developing a powerhouse of economic growth in both rural and urban areas by increasing local food production, marketing, and other infrastructure opportunities.

d. Integrating the potentially beneficial research outcomes into a diverse farm production portfolio will promote enhanced knowledge and production practices. This will encourage the new generation of farmers and ranchers to aspire to be successful producers.

f. Engage stakeholders through on-site demonstrations and educate them about the possibility of producing red bell pepper and roma tomato crops using municipal wastewater.

Expected outcome:

• Food Production and Marketing: By increasing land area for red bell pepper and roma tomato production, a significant contribution to the food security and economic growth can be achieved.

• Chile processing industry: By increasing the local production of red bell pepper and tomatoes, chile-based processing opportunities will be improved. Increased capacity in state's exports is also a possible outcome.

• Water Use and Conservation: By using treated municipal wastewater for human food production, reduces pressure on fresh water supplies.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	To evaluate red bell pepper and roma tomato as potential new crops for New Mexico: This objective will include formulating the best management practices and testing the production capability.
-	2	To compare the yield potential of four varieties of red bell peppers and roma tomato crops: This objective will help the producers to choose the best performing varieties in the Eastern New Mexico and similar environments.
-	3	To examine the effects of treated municipal wastewater on red bell pepper and roma tomato plant health, food and environmental safety, and potential contaminants.
-	4	Disseminate the research results by engaging the local producers and stakeholders through field days and stakeholder meetings.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries.	100
Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	No

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

The NM small-scale vegetable producers can be significantly benefited from the research in building production capacity, processing, and marketing opportunities from these two commodity crops across NM. The successful funding and implementation of this project will provide precise guidelines to NM small-scale producers in growing bell peppers and roma tomatoes using municipal wastewater. A major portion of this funding is dedicated to researching the suitable varieties and management practices in the production of bell pepper and roma tomatoes in NM. In addition, the project will address the potential plant, soil and human health related issues as a result of application of treated municipal water, if any. After accomplishing the research goals as proposed in the project, this research will no longer need any additional funding. The project outcomes could be scaled up to the remaining 108 wastewater treatment facilities with a potential water supply capacity of 146,000 ac-ft. per year across New Mexico thus the chile and tomato production impact could be substantial.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

Alan Porter-Paulita's New Mexico
A small-scale chile processing organization, which is interested in increasing the production capacity if these crops are grown locally.

Marie Nava-Rancho Alma Linda
A small-scale production farm in Tucumcari, which is interested knowing the outcome of this project to explore the production opportunities of bell peppers and roma tomatoes.

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☐

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ☐

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ■

Indicators	Value	N/A
6.1 Number of research goals accomplished	3	☐
6.2 For research conclusions, the number that:		■
6.2a Yielded findings that supported continued research		■
6.2b Yielded findings that led to completion of study		■
6.2c Yielded findings that allow for implementation of new practice, process or technology		■
6.3 Number of industry representatives and other stakeholders who engaged with research results	100	☐
6.4 Total number of research outputs published to industry publications and/or academic journals, and for each published research output, the:	2	☐
6.4a Number of views/reads of published research/data		■
6.4b Number of citations counted		■

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ☐

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

Outcome 6, Indicator 6.1 – A series of periodical tests and assessments will be conducted by different research personnel to evaluate the potential of red bell pepper and roma tomatoes in New Mexico and impacts of wastewater on the crop, soil, and human health aspects.

Early crop growth (transplants in greenhouses)- During first 6-8 weeks, the red bell peppers and roma tomato crops will be monitored for possible early effects of water sources by evaluating the germination and early growth parameters.

Later growth stages- After transplanting to the field, the crops will be monitored for possible growth and development disorders, total above-ground biomass, number of fruits, fruit weight, and total yield.

Soil parameters- Soil samples will be conducted on a monthly basis to monitor plant essential micro and macro nutrients, including Nitrate-N and Total N. Potential contaminants like heavy metals will be monitored on need basis. Soil microbial parameters will be evaluated.

Food safety- Plant samples will be sent to a lab to analyze for food microorganisms and other bio-safety indicators.

Outcome 6, Indicator 6.3 – Field days will be organized at each testing period to educate the small-scale producers and stakeholders about potential impact of using treated municipal wastewater on the production of red bell pepper and tomato crops. A survey will be conducted at the field days to gauge the level of knowledge gained through the event.

Outcome 6, Indicator 6.4- Research results will be published in the form of academic journal articles, extension publications, and scientific abstracts. The research results will also be presented at the various local, regional, and international scientific meetings.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested
Personnel	$28,959.00
Fringe Benefits	$9,832.00
Travel	$4,988.56
Equipment	$0.00
Supplies	$13,000.00
Contractual	$0.00
Other	$51,533.60
Direct Costs Sub-Total	**$108,313.16**

Indirect Costs	$0.00
Total Budget	**$108,313.16**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Research Assistant (TBD)	33%	$25,359.00
-	2	Laborer	300 hours	$3,600.00
-	3	Dr. Murali Darapuneni (PI)	10%	$0.00
-	4	Dr. Marissa Thompson (Co-PI)	<5%	$0.00
-	5	Mr. Leonard Lauriault (Co-PI)	<5%	$0.00
-	6	Dr. Xiufen (Sophia) Li (Co-PI)	<5%	$0.00
-	7	Dr. Willis Fedio (Co-PI)	<5%	$0.00
Personnel Subtotal				**$28,959.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: Funds were requested to support Research Assistant (0.33 FTE) for 2 years. Research Assistant will perform transplant growing, field preparation, planting, trial management such as pests and disease control, weeding, fertilization, irrigation--etc., soil sample collection, plant sample collection, harvesting, data collection and oversee daily laborer.

Personnel 2 (300 hours for 2 years): Hourly laborer for assisting Research Assistant in research activities and trial management such as weeding operations, field preparation, planting and harvesting, etc.

Personnel 3: Dr. Murali Darapuneni (PI)- No grant funds are being requested to support this position. Dr. Darapuneni will be responsible for the preparation of reports, budget monitoring, supervising research assistant, data collection and analysis.

Personnel 4: Dr. Marisa Thompson (Co-PI)- No grant funds are being requested to support this position. Providing research expertise on researching horticultural crops, and extension.

Personnel 5: Mr. Leonard Lauriault (Co-PI)- No grant funds are being requested to support this position. Mr. Lauriault will assist in research related to wastewater effects on crop growth.

Personnel 6: Dr. Xiufen (Sophia) Li (Co-PI)- No grant funds are being requested to support this position. Providing research expertise on soil microbiology; sample analysis for soil health.

Personnel 7: Dr. Willis Fedio (Co-PI)- No grant funds are being requested to support this position. Providing research expertise on food safety; sample analysis for food safety.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Research Assistant **(Note: FB rates for NMSU are likely to change after July 1, 2024 and therefore there may be overages in this budget category reported in the future. Funds from other budget categories may be utilized to cover the overages of the increase in FB, without going over the total budget and while still adhering to the AMS Grant Terms and Conditions).**	36	$9,130.00
-	2	Laborer	19.5	$702.00
-	3	Dr. Murali Darapuneni	0	$0.00
-	4	Dr. Marissa Thompson	0	$0.00
-	5	Mr. Leonard Lauriault	0	$0.00
-	6	Dr. Xiufen Li	0	$0.00
-	7	Dr. Willis Fedio	0	$0.00
Fringe Subtotal				**$9,832.00**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Dr. Li - Las Cruces to Tucumcari	Car mileage rate	miles	2496	$0.67	1	$1,672.32
-	2	Dr. Li - Las Cruces to Tucumcari	hotel	nights	4	$107.00	1	$428.00
-	3	Dr. Li - Las Cruces to Tucumcari	Per diem	days	4	$59.00	1	$236.00
-	4	Dr. Thompson - Los Lunas to Tucumcari	Car mileage rate	miles	2472	$0.67	1	$1,656.24
-	5	Dr. Thompson - Los Lunas to Tucumcari	hotel	nights	6	$107.00	1	$642.00
-	6	Dr. Thompson - Los Lunas to Tucumcari	Per diem	days	6	$59.00	1	$354.00
Travel Subtotal								**$4,988.56**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

For two years:

Trips 1-3: Travel for Co-PI (Xiufen (Sophia) Li) for visiting research location (Tucumcari, NM) from Las Cruces, NM for field day/ stakeholder meeting at the end of each trial year, a total of 2 trips for two years. Dr. Li is stationed at Las Cruces (map mileage (312 miles one-way from Las Cruces to Tucumcari); travelling via State HWY 70, 54, and I-40). Hotel and meal costs (2024 GSA daily lodging and per diem rates) were built into the budget.

Trips 3-6: Travel for Co-PI Dr. Marisa Thompson for visiting research location (Tucumcari, NM) from Los Lunas, NM during the trial establishment, management, sampling time, and field days (extension) in each trial year. An anticipated cost for 6 round trips is proposed for Dr. Thompson (map mileage (206 miles one-way from Las Lunas to Tucumcari); travelling via I-40 Interstate). Hotel and meal costs

(2024 GSA daily lodging and per diem rates) were built into the budget.

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. "Special purpose equipment" is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of "general purpose equipment" must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested

-	1	Transplant/Seedling growth kits	$4,500.00	2	10/01/2024	$9,000.00
-	2	Seed	$250.00	2	10/01/2024	$500.00
-	3	Fertilizer	$450.00	2	10/01/2024	$900.00
-	4	Chemicals (herbicides, pesticides--etc.)	$500.00	2	10/01/2024	$1,000.00
-	5	Sampling bags	$300.00	2	10/01/2024	$600.00
-	6	Pots and growing medium	$500.00	2	10/01/2024	$1,000.00
Supplies Subtotal						**$13,000.00**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

All supplies for two years:

Supply 1: Transplant/Seedling growth kits (2) (SunGrow 20)- These growth chamber kits are required for the proposed experiment for growing tomato and chile seedlings before transplanting into the field. These kits are also essential to evaluate the irrigation source effects on seed germination, seedling vigor, early growth stages of tomato and chile plants. Successfully grown seedlings in the controlled environment are necessary for the execution of field research objectives 1, 2, and 3. These growth chambers will create controlled environment analogous to the nursery conditions in the small-scale vegetable production for seedling growth. The structures are temporary and lasts 3-4 seasons, according to manufacturer description. The cost also includes shipping and temporary installation charges.

Supply 2,3,4: Seeds, fertilizers, and chemicals- Inputs for the growth chamber and field trials for growing chile and tomatoes.

Supply 5: Sampling bags- For collecting plant and soil samples.

Supply 6: Pots and growing medium- For growing chile-pepper and tomato transplants, 64 pots and growing media per each cycle.

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested

-					
Contractual/Consultant Subtotal					

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Farm services	$4,000.00	2	10/03/2024	$8,000.00
-	2	Soil Nutrient Analysis	$34.10	320	10/03/2024	$10,912.00
-	3	Soil Health (microbial)	$20.00	320	08/01/2025	$6,400.00
-	4	Plant tissue analysis	$35.35	320	08/01/2025	$11,312.00

-	5	Plant pathogens	$105.00	64	08/01/2025	$6,720.00
-	6	Water analysis (pathogens)	$60.00	36	10/03/2024	$2,160.00
-	7	Sample shipping	$1,500.00	2	08/03/2025	$3,000.00
-	8	Publication charges	$2,000.00	1	10/01/2026	$2,000.00
-	9	Water analysis (nutrients)	$28.60	36	10/03/2024	$1,029.60
Other Subtotal						**$51,533.60**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

All expenses are for two years.

Other 1: Farm services - Farm services include equipment usage costs such as land preparation equipment, harvesting and spraying equipment, irrigation equipment, soil sampling giddings, and other trial management equipment.

Other 2, 3, 4: Plant and soil samples analysis is done by commercial labs. Soil and plant analysis- For analyzing micro and macro nutrients (including total N, Nitrate-N, and phosphates) throughout the growing period. 2 irrigation sources x 2 crops x 1 variety x 5 sampling periods x 2 years. Soils will be sampled at 2 depths (0-12 and 12-24 inches). Plant analysis is for both petiole and fruit tissue analysis.

Other 5: Plant pathogen analysis- Salmonella, E. Coli, and Listeria testing, 2 sampling periods. Analysis performed by commercial lab, no formal contract is required.

Other 6, 9: Water analysis- pathogens (Salmonella, E. Coli, and Listeria); nutrients. Analysis performed by commercial lab, no formal contract is required.

Other 7: Shipping samples-Shipping soil, plant, and water samples to commercial lab for analysis.

Other 8: Publication charges: Publishing the research data in reputed international journals (open access option).

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested

Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico State University
Organization Contact Name	Saeid Zehtab Salmasi
Phone	334-444-6181
Organization Email	saeidzs@nmsu.edu
Organization Fax	N/A

Mailing Address

Street: 371 County Road 40 P.O. Box 159

City: Alcalde State: NM Zip: 87511

PROJECT TITLE

Integrating saffron into small vegetable production systems of New Mexico to enhance profitability and sustainability.

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

New Mexico State University researchers and Extension Specialists will introduce saffron as a low-maintenance specialty crop with the goal of enhancing the sustainability and profitability of small-scale farming operations. Known as the most expensive spice in the world ($20/gram or $4/square foot, more than $25,000 net income/acre), saffron can be grown in marginal areas with low irrigation and minimal fertilization.

We will demonstrate how the unique growth cycle of saffron can be taken advantage of to increase overall farm profitability and diversity at three New Mexico locations. Saffron growth and production occur in opposite seasons compared to annual vegetables. (Please find a description of the saffron growth cycle in the "Project Purpose" section below.)

In addition to saffron-only test plots, we also will grow saffron with Crop A (New Mexico chile in all 3 locations) and Crop B (to be determined, based on regionally conventional crops of small farms in New Mexico), as well as plots with only Crop A and only Crop B. This will allow researchers to compare the economic income of saffron when planted individually and as intercropping systems.
Growers and underserved farmers will receive hands-on training about planting, harvesting, and processing of saffron during a minimum of three saffron workshops at Alcalde, Los Lunas, and Leyendecker. Saffron recipes will be provided to the attendees during these interactive events. Extension publications and a video about saffron will be generated to educate growers about potential benefits of integrating saffron into current cropping systems and cooking with saffron.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

Medicinal and aromatic plants have a wide range of uses because they constitute the important raw material of pharmaceutical, food, beverage, cosmetic and many other industries. New Mexico has a long history of traditional use of medicinal herbs by Native American and Hispanic cultures. Most irrigated agricultural land in northern New Mexico is cultivated by small-scale farmers and ranchers with fewer than 20 acres. Also, New Mexico is faced with water deficit conditions especially in recent years due to climate change. Now traditional crops are no longer as economical for the farmers, thus medicinal plants gain their importance. Medicinal plants have higher demand in the market and are quite suitable to New Mexico soils and weather conditions.
Saffron (Crocus sativus L.) holds a high economic value as the world's most expensive spice. It plays a crucial role in many small farm economies in countries such as Iran, India, Afghanistan, Greece, Morocco, Spain, and Italy. The net global production of saffron amounts to approximately 418 tons annually, produced on approximately 250,000 acres. More recently, saffron cultivation has been expanded around the world, from New Zealand to New England.
The dried red stigma of the saffron flower is commonly referred to as saffron. It has diverse uses in food and beverage (for tasting, flavoring, and coloring), pharmaceutical, and cosmetic industries. The quality and efficacy of saffron depends on the concentration of three primary metabolites in its dried stigma. These compounds influence color (crocin, a carotenoid pigment), aroma (safranal, a terpene aldehyde), and flavor (picrocrocin, a monoterpene glucoside). The active constituents of saffron are recognized for their potential to prevent and treat various diseases including Alzheimer's, Parkinson's, depression, and cardiovascular, respiratory, and digestive system disorders. Additionally, saffron is recognized for reducing fat and blood sugar, as well as for its antioxidant, anti-cancer, anti-inflammatory, anti-microbial, and immunoregulatory properties.

Saffron is a perennial crop, propagated by bulb-like corms. The mother corms generate new corms annually and the new corms, known as daughter corms, replace the mother corms. Replacement corms become potential mother corms in subsequent growing seasons. The life cycle of saffron is unique and differs from many conventional crops. Saffron begins its biological life cycle by flowering and producing leaves in mid-October and concludes with the formation of replacement corms in the following spring. In general, the flowering begins approximately 45-60 days after corm planted in August/September. However, the grass-like leaves continue growing until December. The growing leaves act like a cover crop in terms of protecting soils from erosion while feeding the soil biology until they die back in the following May. Therefore, no fall/winter cover crop is needed where saffron is grown. The vegetative growth period takes approximately 220 days per year (October through May). This life cycle pattern and the lack of vegetation during the summer months provides an opportunity for integrating saffron into summer vegetable production, thus increasing land use efficiency, the growing season, biodiversity, and farm profitability. This project will follow an innovative scenario to integrate saffron into conventional vegetable production. The gross income from the proposed integrated saffron will be compared to that of conventional systems without saffron. Preliminary research at Alcalde has indicated that each saffron flower yields 0.006g of dry stigma (saffron) at $20 per gram which equals more than $50,000 gross income per acre.
Because soil microbes associate closely with plant root exudates, diversification in any farming system is key to soil microbial diversity. In other words, maximizing living roots during the growing season is vital to soil health and on-farm sustainability. Growing an additional cash crop in a relay with saffron not only generates extra income for the growers, but it can also greatly increase the portion of the year when living roots are present for soil organisms to feed on, thereby improving soil health.
Due to the unique biological, physiological, and cultivation characteristics of saffron, it can be grown on marginal land with minimal off-farm resources like irrigation water, fertilizer, and chemicals for controlling pests and pathogens. However, commercial saffron production in New Mexico requires an evaluation of cultivation strategies, economics, and sustainability to build on interest and preliminary research. The economic viability of saffron will depend critically on its success in growing in NM locations.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	Implement an innovative saffron production system to demonstrate several potential benefits from integrating saffron into the current farming system.
-	2	Provide hands-on training for cultivation, harvesting, and processing of saffron as a new, high-value cash crop to the New Mexico farming community.

-	3	Conduct consistent and relevant outreach throughout the duration of the project in the form of field days, presentations at relevant conferences, recipe sharing, and demonstrations at NM farmers markets. In all these events, samples of foods made of saffron will be presented for tasting.
-	4	Validate the expected economic benefits of integrating saffron into small vegetable production, compared with current cropping systems (Crop A and Crop B) without saffron.
-	5	Produce resources that can be accessed by growers following the completion of the project, including Extension publications and an informational video about how to implement the proposed system and the associated benefits.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries.	750
Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	No

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

This project will demonstrate the benefits of integrating saffron into traditional small-scale vegetable production systems with the goal of enhancing farm sustainability and profitability while improving overall soil health. We anticipate that this project will demonstrate a boost in farm profitability compared with current production systems, which will encourage adoption of saffron as a new value-added, low input cash crop.

A major goal of this project is to generate educational resources, including Extension publications and a 15-minute video to demonstrate step by step saffron cultivation, including planting, maintenance, harvesting, processing, and marketing. Likewise, a video produced about cultivation and management strategies, as well as the environmental and economic benefits, will be available in perpetuity.

Marketing efforts will include internal collaborations with NMSU Extension Family & Consumer Sciences Agent Amber Benson, who specializes in food science and safety, food preservation and technology, and food entrepreneurship. Benson is a recent recipient of the NMSU Innovation Extension Award for her "Making a Living on Five Acres or Less" program, which strives to create sustainable incomes for small growers by building tailored toolkits that may include the development of value-added products and connecting growers with small business incubators nearby. Saffron sole cropping as a cash crop and intercropping can improve agricultural sustainability in NM.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

This project is supported by many small-scale vegetable producers who would like to increase their land use efficiency and farm profitability. Additionally, personal communication indicates many backyard growers are also interested in growing saffron in their yards. For example, after our visit from Los Poblanos Historic Inn & Organic Farms in September 2023, they increased saffron production on their organic farm and their horticulture director explained that there are promising markets for saffron in the Albuquerque area, including their on-site, high-end restaurant. Also, during visits with the Santa Fe County Extension Agent at the Santa Fe Farmers Market, we realized that farmers and customers are interested in saffron. USDA statistics state that 62.1% of farms & ranches are classified as small in northern New Mexico.
Specialty crop stakeholders who stand to benefit from the proposed work include the growers at approximately 15,000 small farms* in NM. We propose that we will deliver outreach programs and resources to 5% of existing small farm growers, totaling 750 growers as project beneficiaries.
We will encourage the involvement of veterans who are farmers or interested in growing by inviting members of regionally based Veterans Services organizations such as the Beginning Farmer and Rancher Program, Armed to Farm in Albuquerque, and the Taos Veterans Farmers Project, among others.

*Small farm operations as defined by USDA as having annual sales less than $250,000)

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☑

Indicators	Value	N/A
1.1 Total number of consumers who gained knowledge about specialty crops:	700	☐
1.1a Adults		☑
1.1b Children		☑

Indicators	Value	N/A
1.2 Total number of consumers who consumed more specialty crops:		▣
1.2a Adults		▣
1.2b Children		▣
1.3 Number of additional specialty crop customers counted		▣
1.4 Number of additional business transactions executed		▣
1.5 Increased sales measured in:		▣
1.5a Dollars		▣
1.5b Percent change		▣
1.5c Combination of volume and average price as a result of enhanced marketing activities		▣

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ■

Indicators	Value	N/A
2.1 Number of stakeholders that gained technical knowledge about producing, preparing, procuring, and/or accessing specialty crops	360	☐
2.2 Number of stakeholders that reported producing, preparing, procuring, and/or accessing more specialty crops		▣
2.3 Total number of market access points for specialty crops developed or expanded, and of those:		▣
2.3a Number of new online portals created to sell specialty crops		▣
2.3b Number with expanded seasonal availability		▣
2.3c Number of existing market access points that expanded specialty crop offerings		▣
2.3d Number of new market access points that established specialty crop offerings		▣
2.4 Number of stakeholders that gained knowledge about more efficient and effective distribution systems		▣
2.5 Number of stakeholders that adopted best practices or new technologies to improve distribution systems		▣
2.6 Total number of partnerships established between producers, distributors, and/or other relevant intermediaries related to distribution systems, and of those established:		▣
2.6a Number formalized with written agreements (i.e. MOU's, signed contracts, etc.)		▣
2.6b Number of partnerships with underserved organizations		▣
2.7 Total number of new/improved distribution systems developed, and of those, the number that:		▣
2.7a Stemmed from new partnerships		▣
2.7b Increased efficiency		▣

Indicators	Value	N/A
2.7c Reduced costs		■
2.7d Increased specialty crop grower participation		■
2.7e Expanded customer reach		■
2.7f Increased online presence		■
2.8 Number of specialty crop-related jobs:		■
2.8a Created		■
2.8b Maintained		■
2.9 Total number of new individuals who went into specialty crop production as a result of marketing, and of those, the number who are:		■
2.9a Beginning farmers or ranchers		■
2.9b Socially disadvantaged farmers or ranchers		■
2.10 Number of market access points that reported increased:		■
2.10a Revenue		■
2.10b Sales		■
2.10c Cost-savings		■

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ☐

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ■

Indicators	Value	N/A
7.1 Number of stakeholders that gained knowledge about environmental sustainability best practices, tools, or technologies	100	☐
7.2 Number of stakeholders reported with an intent to adopt environmental sustainability best practices, tools, or technologies		■
7.3 Number of producers that adopted environmental best practices or tools		■
7.4 Number of new tools/technologies developed or enhanced to improve sustainability/ conservation or other environmental outcomes		■
7.5 Number of additional acres managed with sustainable practices, tools, or technologies that focused on:		■
7.5a Water quality/ conservation		■

Indicators	Value	N/A
7.5b Soil health		■
7.5c Biodiversity		■
7.5d Reduction in energy use		■
7.5e Other positive environmental outcomes (optional)		■
7.6 Number of additional acres established and maintained for the mutual benefit of pollinators/specialty crops		■

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

The proposed project will begin in August 2025, consists of saffron sole cropping, Chile, crop B(to be determined, based on regionally conventional crops of small farms in New Mexico), saffron plus Chile and Crop B. The project will conduct with four replications at Sustainable Agriculture Science Center at Alcalde, Agricultural Science Center at Los Lunas, and Leyendecker Plant Science Center.
Outcome 1.1 and Outcome 2.1:Collect pre and post surveys at workshops, field days and farmers markets. The first saffron workshop will be organized at the Los Lunas Agriculture Center in late October 2025. Similar workshops will be held at the Alcalde and Leyendecker (Las Cruces) locations throughout the proposed project. At the Leyendecker workshop in 2026, attendees will learn about the planting and maintenance of saffron and receive hands-on training about flower harvest, separating the stigmas from flowers, and how to process the stigma after separation. Also a 15 min video about saffron production and processing will publish in NMSUACES Youtube channel that has 259k subscribers, we can also get average views from them of their videos, and NMSU Cooperative Extension Service Facebook page, that has 2.6K followers. Saffron flowers will be harvested in the first and second growing seasons in mid-October to early-November, in 2025 and 2026 respectively.
Outcome 7.1: Saffron budgets will be created based on consensus of opinions of New Mexico State University horticulture and field experts, industry experts, and growers. Experts will detail production practices and inputs used while data on input prices and market conditions will be collected from sales representatives, manufacturers, and the USDA, National Agricultural Statistical Service. During workshops, field day events the benefits of this specialty crop will demonstrate to attendees. We will assess the increase in knowledge of stakeholders about sustainability effects of Saffron by collecting pre and post survey data.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested

Personnel	$49,920.00
Fringe Benefits	$249.60
Travel	$2,938.60
Equipment	$0.00
Supplies	$5,140.00
Contractual	$0.00
Other	$20,589.60
Direct Costs Sub-Total	**$78,837.80**
Indirect Costs	$0.00
Total Budget	**$78,837.80**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Undergraduate student	0.25	$16,640.00
-	2	Undergraduate student	0.25	$16,640.00
-	3	Undergraduate student	0.25	$16,640.00
-	4	Dr. Saeid Zehtab Salmasi, Associate Professor and Research Director at Sustainable Agriculture Science Center at Alcalde, NMSU	<5% FTE	$0.00
-	5	Dr. Marisa Thompson, Urban Horticulture Extension Specialist, NMSU	<5% FTE	$0.00
-	6	Chanz Robbins, IR4 Field Research Director, NMSU	<5% FTE	$0.00
-	7	Robert Hyduck, Research Scientist, NMSU	<5% FTE	$0.00
-	8	Dr. Sawssan Boufous, Extension Economics Specialist	<5% FTE	$0.00

-	9	Dr. Ivette Guzman, Associate Professor, Plant and Environmental Sciences, NMSU	<5% FTE	$0.00
Personnel Subtotal				**$49,920.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1, 2, 3: Undergraduate students will work part-time in summer at Alcalde, Los Lunas and Leyendecker conducting experiments and collecting data.

Personnel 4: Saeid Zehtab Salmasi is the Agricultural Ecology Specialist, an Associate Professor and the research Director of the NMSU Sustainable Agriculture Science Center at Alcalde. Contributions to include: supervising the project, reporting and budgets monitoring.

Personnel 5: Dr. Marisa Thompson is the Urban Horticulture Specialist, a state-wide position based in Los Lunas, for the NMSU Cooperative Extension Service. Contributions to include: Trial installation at the NMSU Ag Science Center at Los Lunas, design and implementation of the study, monitor developments, and assist with data collection,risi@nmsu.edu.

Personnel 6: Chanz Robbins, IR4 Field Research Director in the NMSU Department of Extension Plant Sciences. New Mexico State University, Cooperative Extension Service, Contributions to include: same as Marisa.chanz@nmsu.edu.

Personnel 7: Robert Heyduck is the Research Scientist at SASC of Alcalde. Contributions to include: Conducting trial at Alcalde station, design and implementation of the study, monitor developments, and assist with data collection, collaboration with an NMSU statistician and coauthors to publish results.rheyduck@nmsu.edu.

Personnel 8: Sawssan Boufous, Extension Economics Specialist and Assistant Professor at Las Cruces. sawssanb@nmsu.edu, Department of Extension Economics, New Mexico State University. Contributions to include: Enterprise budget generation, feasibility analysis, and estimation of advantage indexes.

Personnel 9: Dr. Ivette Guzman, Associate Professor of Horticulture, NMSU. Ivguzman@nmsu.edu, She will be sampling the saffron crop for quality by measuring the amount of medicinal compounds in the flower stamens.

No funds are being requested on this grant for personnel 4-9 and will be paid by NMSU.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Undergraduate student **(Note: FB rates for NMSU are likely to change after July 1, 2024 and therefore there may be overages in this budget category reported in the future. Funds from other budget categories may be utilized to cover the overages of the increase in FB, without going over the total budget and while still adhering to the AMS Grant Terms and Conditions).**	0.5	$83.20
-	2	Undergraduate student	0.5	$83.20

-	3	Undergraduate student	0.5	$83.20
Fringe Subtotal				**$249.60**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Alcalde to Los Lunas	mileage	miles	240	$0.67	1	$160.80
-	2	Alcalde to Los Lunas	hotel	nights	1	$107.00	2	$214.00
-	3	Alcalde to Los Lunas	meal	meals	1	$44.25	2	$88.50
-	4	Alcalde to Las Cruces	mileage	miles	640	$0.67	1	$428.80
-	5	Alcalde to Las Cruces	hotel	nights	1	$107.00	2	$214.00
-	6	Alcalde to Las Cruces	meal	meals	1	$44.25	2	$88.50
-	7	Los Lunas to Las Cruces	mileage	miles	410	$0.67	1	$274.70
-	8	Los Lunas to Las Cruces	hotel	nights	1	$107.00	1	$107.00
-	9	Los Lunas to Las Cruces	meal	meals	1	$44.25	1	$44.25
-	10	Los Lunas to Alcalde	mileage	miles	640	$0.67	1	$428.80
-	11	Los Lunas to Alcalde	hotel	nights	1	$107.00	1	$107.00
-	12	Los Lunas to Alcalde	meal	meals	1	$44.25	1	$44.25

-	13	Las Cruces to Alcalde	mileage	miles	240	$0.67	1	$160.80
-	14	Las Cruces to Alcalde	hotel	nights	1	$107.00	1	$107.00
-	15	Las Cruces to Alcalde	meal	meals	1	$44.25	1	$44.25
-	16	Las Cruces to Los Lunas	mileage	miles	410	$0.67	1	$274.70
-	17	Las Cruces to Los Lunas	hotel	nights	1	$107.00	1	$107.00
-	18	Las Cruces to Los Lunas	meal	meals	1	$44.25	1	$44.25
Travel Subtotal								**$2,938.60**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Trips 1-3: Saeid and Rob will travel from Alcalde to visit Los Lunas to see farms and give lectures for field day participants about saffron.

Trips 4-6: Saeid and Rob will travel from Alcalde to Las Cruces and Leyendecker to see farms and give lectures for field day participants about saffron.

Trips 7-9: Marisa will travel from Los Lunas to Las Cruces and Leyendecker to present Los Lunas findings.

Trips 10-12: Marisa will travel from Los Lunas to Alcalde to visit farms and present Los Lunas findings.

Trips 13-15: Chanz will travel from Las Cruces to Alcalde to visit farms and present Leyendacker results.

Trips 16-18: Chanz will travel from Las Cruces to Los Lunas to visit farms and give lecture.

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. “Special purpose equipment” is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of “general purpose equipment” must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Saffron corms	$0.50	3000	01/10/2025	$1,500.00
-	2	Tools	$12.00	20	01/10/2025	$240.00
-	3	Chile and Crop B seeds	$20.00	20	01/05/2025	$400.00

-	4	Chemical analysis supplies	$150.00	20	01/10/2026	$3,000.00
Supplies Subtotal						**$5,140.00**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supply 1: For each location 1000 saffron corms will be needed for planting.

Supply 2: Bulb planter tools - 20 count @ $12 each, $240.

Supply 3: Costs for Chile and Crop B seeds for three locations in two years.

Supply 4: Supplies for quality analysis of saffron stigmas to determine the Crocin and Saffranal content. This analysis will be done by Dr. Ivette Forman in her lab at NMSU. 20 tests at $150 each.

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-					
Contractual/Consultant Subtotal					

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Publication fee	$3,000.00	1	01/10/2026	$3,000.00
-	2	NMSU, management fee	$4,000.00	3	01/05/2025	$12,000.00
-	3	Video	$5,000.00	1	01/09/2025	$5,000.00
-	4	Educational monograph publication	$2.68	220	01/05/2025	$589.60
Other Subtotal						**$20,589.60**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

Other 1: Publication fee for manuscript publication in peer reviewed journals.

Other 2: Management costs including irrigation charges, land preparation and equipment usage charges, fertilizers, herbicides, and other plant protection chemicals, application charges.. Etc. for 2 years at three locations.

Other 3: Costs for a 15 minute video about Saffron production. This video will be produced by New Mexico State University's Creative Media Institute (CMI).

Other 4: We will print different educational materials including a one page color monograph on saffron production to present at field days, the unit cost may varies, so this is an average.

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested
Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico State University Sustainable Agriculture Science Center at Alcalde
Organization Contact Name	Saeid Zehtab Salmasi
Phone	334-444-6181
Organization Email	saeidzs@nmsu.edu
Organization Fax	N/A

Mailing Address

Street: 371 County Road 40 P.O. Box 159

City: Alcalde State: NM Zip: 87511

PROJECT TITLE

Chickpea, a high value, low input sustainable specialty crop for New Mexico

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

Chickpea (Cicer arietinum L.) originated in what is now southeastern Turkey and Syria and was domesticated about 9,000 B.C. A high-value grain legume or "pulse" crop adapted to deep soils in the semiarid regions, sold in human food markets. Chickpeas, also known as garbanza beans, take many forms. In North America, chickpeas are marketed as canned chickpeas for salads, as dried chickpeas, and ground as flour for baking purposes. Particularly with the rise in gluten-free options and preferences for consumers. The mild flavor, coupled with a protein level of 17-22%, is encouraging increased use of chickpeas as a plant-based food ingredient.
In the U.S., chickpea planted acreages have changed from 317 million acres in 2021, down to 312 million in 2022, and back up to 318 million in 2023. With only 10.33% arable land in a semi-arid to arid environment, agriculture in New Mexico relies heavily on both surface

and groundwater sources for irrigation. Cool season food legumes, including dry peas, and lentils, are an important feature of the dry farm lands of the western U.S. Chickpea acreage in New Mexico has increased from 785,000 acres in 2021 to 826,000 acres in 2023 (USDA National Agricultural Statistics Service 2023).
New Mexico State University researchers and Extension Specialists will introduce climate resilient methods for producing chickpea varieties at water deficit conditions of New Mexico. We will demonstrate how different varieties of this high value, low input specialty crop can help farmers to improve their farms income using a climate smart approach.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

In 2022, the chickpea market is growing at a steady rate and with the rising adoption of strategies by key players, the market is expected to rise over 2023-2030 horizon. The global chickpeas market size reached 20.5 Million Tons in 2023. Looking forward, IMARC Group expects the market to reach 31.7 Million Tons by 2032, exhibiting a growth rate (CAGR) of 4.76% during 2024-2032. Today, U.S. chickpea production is located in Idaho, Washington, Oregon, Montana, North Dakota, South Dakota, Nebraska, Colorado, and California.
New Mexico State University will introduce climate resilient methods for producing chickpea varieties at water deficit conditions of New Mexico. Most irrigated agricultural land in northern New Mexico is cultivated by small-scale farmers and ranchers with fewer than 20 acres (Annual report of SASC at Alcalde, 2021). New Mexico is faced with water deficit conditions that may be worsening with climate change. With all the risk farmers face, research alleviating uncertainty about the economic implications of climate-smart, low-input, high-value crops should be prioritized.
This project will follow an innovative scenario to introduce climate resilient methods for producing Chickpea as high value, low input specialty crop for water deficit conditions of New Mexico.
Chickpea plants have root nodules that can fix most of the soil nitrogen needed for growth from atmospheric nitrogen, the plant has also an effective rooting depth of up to 4 feet. Harvesting can be accomplished by either direct combining the crop or swathing before combining, depending on uniformity of maturity.
Chickpea is a cool season crop that grows best when daytime temperatures are between 70 and 84 °F, and nighttime temperatures are between 64 and 70 °F. The crop does well in regions with 6-10 inches of growing season precipitation. Temperatures above 98 °F can cause stress during early flowering and pod development, resulting in reduced yields. But chickpea performs better than dry pea and lentil under heat and drought stress. Chickpea as a crop is somewhat drought tolerant. Varieties adapted to the west take 84 to 130 days to mature. Chickpeas root deeper than dry peas or lentils and are more drought tolerant because they can tap into stored subsoil moisture when available.
This project will follow a climate resilient approach for producing chickpea in water deficit conditions of Northern New Mexico. We will evaluate production under several irrigation regimes, including variable irrigation, limited irrigation, and extreme deficit irrigation. These trials will occur in Tucumcari, Alcalde, and Farmington to improve New Mexico producers specially underserved, beginning, and veteran farmers knowledge about chickpea production as a valuable protein source to increase food security.

The relative profitability of chickpea compared to traditional northern New Mexico crops will be estimated, so we will explain how farmers can develop a climate smart way for producing this low input, high value crop at New Mexico.
Chickpea, like other annual legumes in a rotation, offers several cropping advantages for the producer. Cereal crop yields often increase when planted after legumes due to disrupting cereal pest life cycles, and increasing the soil nitrogen supply.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	Improve the field performance of Chickpea varieties in semi-arid conditions of New Mexico.
-	2	Provide hands-on training for cultivation, harvesting, and processing of Chickpea, a high-value cash crops to the New Mexico farming community
-	3	Conduct consistent and relevant outreach throughout the duration of the project in the form of field days, presentations at relevant conferences, and demonstrations at NM farmers markets.
-	4	Utilizing the BENCO model (BreakEven for New Crop Options), the relative profitability of chickpea compared to traditional northern New Mexico crops will be estimated, as well as estimates of changes in input values.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries. 750

Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	No

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

This project will demonstrate the benefits of integrating Chickpea into current production systems with the goal of enhancing farm sustainability and profitability.
A major goal of this project is to generate educational resources, including a monograph to demonstrate step by step Chickpea cultivation, including planting, maintenance, harvesting, and processing to New Mexico farmers. Financial and marketing considerations will be included in the monograph. New Mexico farmers have the needed machines for planting as well as harvesting chickpea which is similar to other dry beans. Also as a nitrogen fixing legume, chickpea can play a beneficial role in crop rotations as well as a winter cover crop in New Mexico. We anticipate that this project will demonstrate a boost in farm profitability and introduce a climate smart approach for low input small scale farming at New Mexico.
We will continue our collaboration with Grain Legume Genetics Physiology Research on chickpea variety trail and the project will hopefully become self-funded by local food hubs in future years.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

This project is supported by many small-scale producers who would like to increase their land use efficiency and farm profitability. Additionally, personal communication indicates many backyard growers are also interested in growing Chickpea in their farms. Also, chickpea as a protein rich and gluten free food could improve food security at New Mexico.
Navajo Agricultural Products Industry with over 80,000 acres of irrigated farmland and one of the largest tribally managed farms in North America is supporting and interested in the outcomes of this project.
Specialty crop stakeholders who stand to benefit from the proposed work include the growers at approximately 15,000 small farms* in NM. We propose that we will deliver outreach programs and resources (e.g., insect ID workshops, a fact sheet, newspaper articles, etc.) to 5% of existing small farm growers, totaling 750 growers as project beneficiaries.

*Small farm operations as defined by USDA as having annual sales less than $250,000)

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ■

Indicators	Value	N/A
1.1 Total number of consumers who gained knowledge about specialty crops:	360	☐
1.1a Adults		■
1.1b Children		■
1.2 Total number of consumers who consumed more specialty crops:		■
1.2a Adults		■
1.2b Children		■
1.3 Number of additional specialty crop customers counted		■
1.4 Number of additional business transactions executed		■
1.5 Increased sales measured in:		■
1.5a Dollars		■

Indicators	Value	N/A
1.5b Percent change		■
1.5c Combination of volume and average price as a result of enhanced marketing activities		■

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ■

Indicators	Value	N/A
2.1 Number of stakeholders that gained technical knowledge about producing, preparing, procuring, and/or accessing specialty crops	100	☐
2.2 Number of stakeholders that reported producing, preparing, procuring, and/or accessing more specialty crops		■
2.3 Total number of market access points for specialty crops developed or expanded, and of those:		■
2.3a Number of new online portals created to sell specialty crops		■
2.3b Number with expanded seasonal availability		■
2.3c Number of existing market access points that expanded specialty crop offerings		■
2.3d Number of new market access points that established specialty crop offerings		■
2.4 Number of stakeholders that gained knowledge about more efficient and effective distribution systems		■
2.5 Number of stakeholders that adopted best practices or new technologies to improve distribution systems		■
2.6 Total number of partnerships established between producers, distributors, and/or other relevant intermediaries related to distribution systems, and of those established:		■
2.6a Number formalized with written agreements (i.e. MOU's, signed contracts, etc.)		■
2.6b Number of partnerships with underserved organizations		■
2.7 Total number of new/improved distribution systems developed, and of those, the number that:		■
2.7a Stemmed from new partnerships		■
2.7b Increased efficiency		■
2.7c Reduced costs		■
2.7d Increased specialty crop grower participation		■
2.7e Expanded customer reach		■
2.7f Increased online presence		■
2.8 Number of specialty crop-related jobs:		■
2.8a Created		■
2.8b Maintained		■

Indicators	Value	N/A
2.9 Total number of new individuals who went into specialty crop production as a result of marketing, and of those, the number who are:		■
2.9a Beginning farmers or ranchers		■
2.9b Socially disadvantaged farmers or ranchers		■
2.10 Number of market access points that reported increased:		■
2.10a Revenue		■
2.10b Sales		■
2.10c Cost-savings		■

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ☐

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ■

Indicators	Value	N/A
7.1 Number of stakeholders that gained knowledge about environmental sustainability best practices, tools, or technologies	100	☐
7.2 Number of stakeholders reported with an intent to adopt environmental sustainability best practices, tools, or technologies		■
7.3 Number of producers that adopted environmental best practices or tools		■
7.4 Number of new tools/technologies developed or enhanced to improve sustainability/ conservation or other environmental outcomes		■
7.5 Number of additional acres managed with sustainable practices, tools, or technologies that focused on:		■
7.5a Water quality/ conservation		■
7.5b Soil health		■
7.5c Biodiversity		■
7.5d Reduction in energy use		■
7.5e Other positive environmental outcomes (optional)		■
7.6 Number of additional acres established and maintained for the mutual benefit of pollinators/specialty crops		■

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

The proposed project consists of two Chickpea varieties , two planting times, and three irrigation treatments including well irrigation, limited irrigation, and dry land farming. The experiment will be laid out during 2025 and 2026 growing seasons in a complete randomized block design with four replications. The projects will be conducted at the Sustainable Agriculture Science Center at Alcalde, Agricultural Science Center at Farmington, and Rex E. Kirksey Agricultural Science Center at Tucumcari. The Grain yield, soil nitrogen and water use efficiency data will be collected.

Outcome1, Indicator 1.1: In three workshops during NMSU Agriculture Science Centers at Alcalde, Tucumcari and Farmington, also through presentations at relevant conferences, and demonstrations at NM farmers, attendees will have the opportunity to learn about planting, cultivation and harvesting of chickpea varieties. During this events we will collect surveys from consumers who gained knowledge about this specialty crop.

Outcome 2,Indicator 2,1: During the field days in August 2025 and 2026 the attendees will learn about the planting and maintenance of Chickpea. Also, we will introduce chickpea products and recipes at Farmers markets as well as NMSU Ag Science Centers field days. Pre and post surveys will be collected to assess the increase in knowledge of the attendees.

Outcome 7, Indicator 7.1 : Utilizing the BENCO model, the relative profitability of chickpea compared to traditional northern New Mexico crops will be estimated, as well as estimates of changes in input values. The feasibility and profitability of chickpea production in New Mexico will be evaluated during 2025 and 2026. During workshops, field day events and farm visits the benefits of this specialty crop will demonstrate to attendance and invited underserved, beginning, and veteran farmers and the number of stakeholders that gained knowledge will be evaluated using pre and post surveys.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested
Personnel	$44,807.00
Fringe Benefits	$4,316.12
Travel	$2,584.50
Equipment	$0.00
Supplies	$673.00

Contractual	$0.00
Other	$18,536.00
Direct Costs Sub-Total	**$70,916.62**
Indirect Costs	$0.00
Total Budget	**$70,916.62**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Research Scientist	0.15	$11,527.00
-	2	Undergraduate student	0.25	$16,640.00
-	3	Undergraduate student	0.25	$16,640.00
-	4	Dr. Saeid Zehtab Salmasi	<5% FTE	$0.00
-	5	Robert Heyduck	<5% FTE	$0.00
-	6	Dr. Murali Daraponeni	<5% FTE	$0.00
-	7	Dr. Koffi Djaman	<5% FTE	$0.00
-	8	Dr. Frannie Miller	<5% FTE	$0.00
Personnel Subtotal				**$44,807.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: One of Research Scientists at Rex E. Kirksey Agricultural Science Center at Tucumcari will collaborate conducting the research plots, data collection and analysis.

Personnel 2 and 3: Undergraduate Student Employee for Alcalde and Farmington - 1 student per season, part-time, summers only. These students will collaborate on conducting field studies as well as field days and workshops.

Personnel 4: Dr. Saeid Zehtab Salmasi is the Agricultural Ecology Specialist, an Associate Professor and the research Director of the NMSU Sustainable Agriculture Science Center at Alcalde. Contributions to include: supervising, reporting and budgets monitoring of this grant. No funds are being requested on this grant.

Personnel 5: Robert Heyduck is the Research Scientist at SASC of Alcalde. He will conduct trials at Alcalde station, design and implementation of the study, monitor developments, and assist with data collection, collaboration with an NMSU statistician and coauthors to publish results. No funds are being requested on this grant.

Personnel 6: Dr. Murali Darapuneni is an Associate Professor at Rex E. Kirksey Agricultural Science Center at Tucumcari and a specialist of systems approach to find sustainable solutions for semi-arid agriculture. He will contribute on conducting and leading research and outreach activities at Tucumcari. No funds are being requested on this grant.

Personnel 7: Dr. Koffi Djaman is an Associate Professor at Agricultural Science Center at Farmington. He will lead research trial at Farmington. No funds are being requested on this grant.

Personnel 8: Dr. Frannie Miller is an Assistant Professor in the Department of Agricultural Economics and Agricultural Business at NMSU. She will collaborate on evaluation of the feasibility and profitability of chickpea production in New Mexico. No funds are being requested on this grant.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Research Scientist **(Note: FB rates for NMSU are likely to change after July 1, 2024 and therefore there may be overages in this budget category reported in the future. Funds from other budget categories may be utilized to cover the overages of the increase in FB, without going over the total budget and while still adhering to the AMS Grant Terms and Conditions).**	36	$4,149.72
-	2	Student	0.5	$83.20
-	3	Student	0.5	$83.20
Fringe Subtotal				**$4,316.12**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Alcalde to Tucumcari	mileage	miles	400	$0.67	1	$268.00
-	2	Alcalde to Tucumcari	hotel	nights	2	$107.00	2	$428.00
-	3	Alcalde to Tucumcari	meals	days	2	$44.25	2	$177.00
-	4	Alcalde to Farmington	mileage	miles	400	$0.67	1	$268.00
-	5	Alcalde to Farmington	hotel	nights	2	$107.00	2	$428.00
-	6	Alcalde to Farmington	meals	days	2	$44.25	2	$177.00
-	7	Tucumcari and Farmington	mileage	miles	400	$0.67	2	$536.00
-	8	Tucumcari and Farmington	hotel	nights	1	$107.00	2	$214.00
-	9	Tucumcari and Farmington	meals	days	1	$44.25	2	$88.50
Travel Subtotal								**$2,584.50**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Trips 1-3: Saeid and Rob will travel from Alcalde to Tucumcari in the first and second year of project to visit farms and participate on field

days and workshop events related to project.

Trips 4-6: Saeid and Rob will travel from Alcalde to Farmington in the first and second year of project to visit farms and participate on field days and workshop events related to project.

Trips 7-9: Murali and Koffi will travel from Tucumcari and Farmington, respectively, to Alcalde to visit farms and present the results at field day and workshop.

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. "Special purpose equipment" is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of "general purpose equipment" must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Chickpea seeds	$28.00	10	01/02/2025	$280.00
-	2	Inoculant	$15.00	4	01/02/2025	$60.00
-	3	Stakes	$111.00	3	01/02/2025	$333.00
Supplies Subtotal						**$673.00**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supply 1: Chickpea seeds needed for planting research plots for 2 years at three locations.
Supply 2: Inoculants: seeds will be inoculated with nitrogen fixing bacteria.
Supply 3: Stakes will be need for marking plots at 3 locations.

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-					
Contractual/Consultant Subtotal					

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Management and Irrigation	$5,000.00	3	01/02/2025	$15,000.00
-	2	Publication fee	$3,000.00	1	01/02/2026	$3,000.00
-	3	Educational monograph publication	$2.68	200	01/05/2025	$536.00
Other Subtotal						**$18,536.00**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

Other 1: Management costs including irrigation charges, land preparation and equipment usage charges, fertilizers, herbicides, and other plant protection chemicals, application charges.. Etc. for 2 years in 3 locations.

Other 2: Publication fee will be need for manuscript publication in peer reviewed journals.

Other 3: We will print different educational materials including a one page color monograph on Chickpea production to present at field days, the unit cost may varies, so this is an average.

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested
Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico Department of Agriculture/New Mexico State University
Organization Contact Name	Juan Sanchez
Phone	(575) 646-4929
Organization Email	jsanchez@nmda.nmsu.edu
Organization Fax	n/a

Mailing Address

Street: MSC 6500 PO Box 30005

City: Las Cruces State: New Mexico Zip: 88001

PROJECT TITLE

Increasing Awareness of NM Chile

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

The NMDA will help increase awareness and knowledge of New Mexico green chile by educating retailers, food service professionals, and consumers by providing educational workshops, seminars, and consumer education segments.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

New Mexico is a leader in high quality green chile pepper production. Over the years, New Mexico green chile has been getting brand recognition through successful marketing strategies at the state and regional levels. However, there is lack of awareness and knowledge outside the Southwest about NM green chile. NM green chile producers have the capability to distribute fresh and processed chile nationwide. Therefore, educating consumers, retailers, food service professionals such as chefs, restaurant managers and culinary students will help increase knowledge and awareness of NM green chile. Retail store personnel lack the knowledge of how to best roast, merchandise, and market green chile to its consumer. Workshops will be executed to educate retailers on proper roasting techniques, roaster safety, merchandising and cross merchandising concepts, and provide ideas on different marketing strategies. Food service professionals lack knowledge of the nutritional information, flavor profiles, seasonality, storage needs, and versatility. A NMDA Chef Ambassador will work with food service professionals to implement green chile in recipes and menu developments. Consumers will be educated on its health benefits, recipe versatility, access, preparation and storage of green chile. Consumers will be engaged with educational reading materials and sampling segments at food related platforms such as restaurant fronts, farmers markets, food shows, etc.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	Increase the awareness, knowledge and accessibility of New Mexico chile of consumers in new geographic consumer markets.
-	2	Increase the knowledge, awareness, and ability of food industry professionals and retail grocery employees to execute successful New Mexico fresh green chile roastings, cross merchandising, and displays while maintaining safety and a high level of knowledge about the chile.
-	3	Maintain and establish successful partnerships and transactions between New Mexican chile distributors and growers and retail grocery and food service clients.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries.	350
Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	Yes

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

This project is continuing the efforts of the 2021 Farm Bill (AM21SCBPNM1027) project titled "Educational Workshops Featuring NM Green Chile" and a 2018 (AM180100XXXXG004) project titled "National Retail and Distributor Educational Workshops Featuring New Mexico Green Chile."

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

This project will build on the previous efforts of the aforementioned projects because we will do refresher NM green chile trainings for stores that require retraining. Additionally, we will expand the retail locations and retail chains. Also, there will be new components to this proposed project which will focus more on developing business-to-business channels for NM green chile via food service demonstrations and groceraunt collaborations. Furthermore, the project will focus on implementing educational segments in the food service industry. A NMDA Chef Ambassador will educate chefs, culinary students, and food service personnel about NM green chile and implement innovative menus and recipe development utilizing NM green chile. By developing business-to-business outlets for green chile, this proposal will increase the reach of education about how to prepare and access NM fresh and processed green chile and provide consumer's a chance to try the products in professional preparations, ultimately benefiting the industry.

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

Previous projects have paved the path for New Mexico green chile to enter into new markets. However, the previous project encountered a few constraints that affected the efforts to reach the projected outcomes. Impacts of COVID-19 lingered in certain markets with local health orders. Workshops had to be canceled or done virtually. In addition, retailers faced labor constraints and higher-than-usual turnover rates which led to the loss of institutional knowledge on green chile preparation. By continuing our educational efforts to these retailers, this set of workshops will help address any turnover rates and assist new personnel about New Mexico green chile. When workshops were able to be executed, they were well-received. Retailers continuously express enthusiasm and appreciation and reach out for opportunities to receive additional workshops.

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

Workshops were well received and appreciated by retailers. The demand for workshops was high. Due to capacity issues, some workshop requests had to be denied. Some workshops were done virtually, however, an in-person training is more valuable to the retailers. They value the hands-on training on roaster safety and operation. These components are difficult to execute virtually with the same impact. Another major reason for the high demand of workshops that was unable to be met was because of the high turnover at the NMDA. To improve this, NMDA is hiring new staff that will assist in conducting workshops in efforts to educate new hires, new retailers, and refresh past personnel. In conversations with retail managers, they suggested a direct-to-consumer educational segment. They also suggested working with restaurants or food service institutions about incorporating chile in their menus during the chile season. This project has chosen to focus on the latter suggestion.

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

During previous trainings, we've found that food service professionals lack knowledge about the nutritional information, flavor profiles, seasonality, storage needs, and versatility of green chile. To help improve the knowledge of how to use NM green chile, NMDA will utilize a New Mexico Chef Ambassador to work with food service professionals to implement green chile in recipes and menu developments. In addition to these projects, the chef ambassador will host a seminar at a food conference, trade show, culinary school, etc. Consumers will be educated on its health benefits, recipe versatility, access, preparation and storage of green chile. These menu items will not only improve awareness of ways to prepare green chile but give consumers who are not aware of green chile opportunities to try it in well balanced preaparations.

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

This project and all previous efforts by NMDA to promote NM chile similar to this campaign have been successful. NMDA continues to seek recurring state appropriations that could be used to support such efforts, but some aspects of these trainings will likely always be necessary for various markets due to expansion, personnel turnover, and the importance of safety. The focus of this proposal, and potential future proposals, will be on fresh new approaches and components that staff see as having the potential to enhance existing efforts.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

The New Mexico Chile Commission supports this project. The New Mexico Chile Commission has expressed that the efforts conducted by NMDA has positively impacted the New Mexico chile industry. NMDA has helped many chile shippers and growers penetrate new markets within national retail chains. As a result, the demand of NM green chile has grown throughout the years and continues to be a popular commodity. NMDA's trainings and workshops play a critical role in providing retailer, distributor, and customer awareness of NM chile and creating more demand for it on a national scale.

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☐

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ■

Indicators	Value	N/A
2.1 Number of stakeholders that gained technical knowledge about producing, preparing, procuring, and/or accessing specialty crops	300	☐
2.2 Number of stakeholders that reported producing, preparing, procuring, and/or accessing more specialty crops		■
2.3 Total number of market access points for specialty crops developed or expanded, and of those:		■
2.3a Number of new online portals created to sell specialty crops		■
2.3b Number with expanded seasonal availability		■
2.3c Number of existing market access points that expanded specialty crop offerings		■
2.3d Number of new market access points that established specialty crop offerings	30	☐
2.4 Number of stakeholders that gained knowledge about more efficient and effective distribution systems		■
2.5 Number of stakeholders that adopted best practices or new technologies to improve distribution systems		■
2.6 Total number of partnerships established between producers, distributors, and/or other relevant intermediaries related to distribution systems, and of those established:		■
2.6a Number formalized with written agreements (i.e. MOU's, signed contracts, etc.)		■
2.6b Number of partnerships with underserved organizations		■
2.7 Total number of new/improved distribution systems developed, and of those, the number that:		■
2.7a Stemmed from new partnerships		■
2.7b Increased efficiency		■
2.7c Reduced costs		■
2.7d Increased specialty crop grower participation		■
2.7e Expanded customer reach		■
2.7f Increased online presence		■
2.8 Number of specialty crop-related jobs:		■

Indicators	Value	N/A
2.8a Created		■
2.8b Maintained		■
2.9 Total number of new individuals who went into specialty crop production as a result of marketing, and of those, the number who are:		■
2.9a Beginning farmers or ranchers		■
2.9b Socially disadvantaged farmers or ranchers		■
2.10 Number of market access points that reported increased:		■
2.10a Revenue		■
2.10b Sales		■
2.10c Cost-savings		■

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ☐

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ☐

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

Outcome 2, Indicator 1 & 3d- Surveys will be administered to collect data on the gain of knowledge of participants during the retail workshops, food service seminars, and direct to consumer events. A QR code will be generated where participants can utilize their phones to do the survey and indicate information that they learned and their intention of utilizing green chile in their stores/food service

activities. Data will be collected by the online survey tool and analyzed by the PI and other NMDA staff.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested
Personnel	$0.00
Fringe Benefits	$0.00
Travel	$31,219.02
Equipment	$0.00
Supplies	$940.00
Contractual	$8,100.00
Other	$6,811.33
Direct Costs Sub-Total	**$47,070.35**
Indirect Costs	
Total Budget	**$47,070.35**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Juan Sanchez/NMDA Ag Marketing Specialist, Sr.		$0.00
-	2	TBD/NMDA Ag Marketing Specialist		$0.00
Personnel Subtotal				**$0.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: Juan Sanchez will serve as the principal investigator on this project. He will plan, execute, and collect the data and report on all outcome measures for this project. No funds are being requested as all personnel costs will be covered by the NMDA.

Personnel 2: Marketing Specialist, to be named. This individual's position has yet to be filled within NMDA. Once on board, this person will play a support role to Mr. Sanchez in executing the trainings and consumer education events. No funds are being requested as all personnel costs will be covered by the NMDA.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-		NA		
Fringe Subtotal				

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	New Orleans, LA	air fare, hotel, per diem, car rental	trip	1	$746.50	2	$1,493.00
-	2	Boise, ID	air fare, hotel, per diem, car rental	trip	1	$790.50	2	$1,581.00

-	3	Charleston, SC	air fare, hotel, per diem, car rental	trip	1	$968.50	2	$1,937.00
-	4	Los Angeles, CA	air fare, hotel, per diem, car rental	trip	1	$930.50	2	$1,861.00
-	5	San Diego, CA	air fare, hotel, per diem, car rental	trip	1	$930.50	2	$1,861.00
-	6	San Fransisco, CA	air fare, hotel, per diem, car rental	trip	1	$1,010.50	2	$2,021.00
-	7	Kansas City, MO	air fare, hotel, per diem, car rental	trip	1	$692.50	2	$1,385.00
-	8	Memphis, TN	air fare, hotel, per diem, car rental	trip	1	$696.50	2	$1,393.00
-	9	Asheville, NC	air fare, hotel, per diem, car rental	trip	1	$710.50	2	$1,421.00
-	10	Orlando, FL	air fare, hotel, per diem, car rental	trip	1	$730.50	2	$1,461.00
-	11	Charlotte, NC	air fare, hotel, per diem, car rental	trip	1	$708.50	2	$1,417.00
-	12	Houston, TX	air fare, hotel, per diem, car rental	trip	1	$694.50	2	$1,389.00
-	13	Oklahoma City, OK	air fare, hotel, per diem, car rental	trip	1	$660.50	2	$1,321.00
-	14	Phoenix, AZ	air fare, hotel, per diem, car rental	trip	1	$660.50	2	$1,321.00
-	15	Dallas, TX	air fare, hotel, per diem, car rental	trip	1	$776.01	2	$1,552.02
-	16	Denver, CO	air fare, hotel, per diem, car rental	trip	1	$872.50	2	$1,745.00
-	17	Houston, TX	air fare, hotel, per diem, car rental	trip	1	$694.50	2	$1,389.00
-	18	Richmond, VA	air fare, hotel, per diem, car rental	trip	1	$738.50	2	$1,477.00

-	19	Cincinnati, OH	air fare, hotel, per diem, car rental	trip	1	$772.50	2	$1,545.00
-	20	Portland, OR	air fare, hotel, per diem, car rental	trip	1	$824.50	2	$1,649.00
Travel Subtotal								**$31,219.02**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Overall: Each trip includes estimated round trip airline tickets (~$200 each), 1 full and 2 half days of per diem for the city of travel, 2 nights at a hotel at the GSA rate for the city of travel and 2-3 days of a single car rental for $75 on average. These cities are projected but actual locations of travel may vary depending on the requests/agreements made by managers. From previous experience, managers often wait until June or July to definitively agree to training locations for the year which means that location flexibility is incredibly important to the successful execution of these trainings. If there are cost overages, NMDA will cover those from existing state appropriations.

Projected locations for retail training courses (Estimated 2-3 per year in July 2025, 2026, 2027).
Trips 1-8: New Orleans, LA; Boise, ID (request); Charleston, SC; Los Angeles, CA; San Diego, CA; San Fransisco, CA (request); Kansas City, MO; Memphis, TN
These cities were selected as potential sites because they have a thriving culinary scene that is amenable to unique cultural and spicy foods. Two of these cities (Boise and San Fransisco) had previously requested trainings but there was not adequate time or funding to facilitate travel to those cities.

Projected locations to connect with product development staff for groceraunts/gas stations to try to develop seasonal menu items featuring green chile (Estimated 1-2 per year in July 2025, 2026, 2027):
Trips 9-13: Asheville, NC (Ingles HQ); Orlando, FL (Publix HQ); Charlotte, NC (Harris Teeter HQ); Lake Jackson TX (Buc-ee's HQ); Oklahoma City, OK (Love's Travel Stops HQ)

Refresher retail trainings for previously visited locations that require additional training due to staff changes and turnover (Estimated 2-3 per year in July 2025, 2026, 2027).:
Trips 14-20: Phoenix, AZ; Dallas, TX; Denver, CO; Houston, TX; Richmond, VA; Cincinnati, OH; Portland, OR

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. "Special purpose equipment" is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of "general purpose equipment" must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-		N/A			
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

N/A

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Retail Workshop Supplies	$20.00	5	As needed	$100.00
-	2	Retail Seminar Supplies	$280.00	3	As needed	$840.00
Supplies Subtotal						**$940.00**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supply 1: Retail Workshops Supplies- Supplies for chile roaster accessories such as XL tongs (~$20), Allen wrenches ($10), chutes ($100) bearings ($50) and safety equipment. Chile roasters are an essential aspect to the retail workshops. Roasting green chile is an essential step to preparing the green chile and imbues flavor onto the peppers. Retail grocers who provide free roasting services or demonstrations at their locations entices consumers to purchase fresh NM green chile. Showing retail workers how to safely use their roaster and ensure proper safety equipment is utilized is critical to the long-term success of these market channels. Safety equipment includes safety glasses and heat resistant gloves. Other roasting accessories include couplers, wrenches, hoses, etc. to ensure that the roaster is safely hooked up to the propane needed to work the roaster. Estimated cost for supplies is $20.00 each for 5 occasions as needed for a total of $100. Any additional supplies needed will be purchased by NMDA through state appropriations.

Supply 2: Food Service Seminar supplies- $280 a year in supplies include sampling products, paper goods, serveware, etc.

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-	1	NMDA Chef Ambassador			$0.00
-	2	Meeting room for food service seminar	Flat Rate	$2,700.00	$8,100.00
Contractual/Consultant Subtotal					**$8,100.00**

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

Contractual 1: NMDA Chef Ambassador is currently under contract with NMDA and will assist in the planning, executing, and data collection primarily within the food service sector. No funds are being requested. Expenses will be covered by NMDA.

Contractual 2: Food Service Seminar meeting room - This meeting room would cover the costs of all 3 of the food service seminars to be conducted each year. This would be a rental agreement between the NMDA and the meeting room location (for example like a convention center). This is an estimate for all three years ($2,000/year) based on prior experience contracting these types of spaces. The meeting room would be used to host the seminar to be conducted by one of the NMDA Chef Ambassadors to educate groceraunt retailers about how to prepare and utilize green chile in recipes. The availability of green chile for trial through seasonal recipes will create new market channels for green chile. These room rental contracts may include upcharges for the use of their presentation equipment such as speakers, projectors and microphones and this is estimated at an additional $700/year.

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Shipping/freight	$2,000.00	1	July 2025, 2026, 2	$2,000.00
-	2	Roaster maintenance	$100.00	4	As needed	$400.00
-	3	Roaster curriculum	$4,411.33	1	July 2026	$4,411.33
Other Subtotal						**$6,811.33**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

Other 1: Shipping/freight - This is the estimated costs to ship supplies, printed materials, chile roasters, pop up tents, tables, green chile for sampling, etc. needed at these promotional events over the course of the 3 years of the grant. Estimate is based on the costs from previous experience in shipping these items through USPS, FedEx, and freight company.

Other 2: Roaster maintenance - As needed, NMDA staff will work with a local repair shop specializing in chile roaster manufacturing and repair to upgrade and maintain the roasters. Repair costs will vary depending on the maintenance required but potential maintenance may include but is not limited to: motor replacement, chute replacement (due to wear and tear or food safety upgrades), bearing replacement, or cage repairs.

Other 3: Roaster Curriculum - Design and printing for educational pamphlets including educational information about how to set up a roaster, how to prepare, access, and consume New Mexico Green chile, as well as educational information about how the peppers are grown and why NM chile is a superior product. These materials will be utilized at all workshops/demonstrations/seminars and will be

used to reduce the need for in-person refresher trainings. Estimated cost to design and print these materials is $4,411.33. All materials will use the language of 'New Mexico chile' and will not be marketing/for the benefit of one chile producer/distributor.

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested
0	$0.00
Indirect Subtotal	**$0.00**

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-	N/A		
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	New Mexico State University
Organization Contact Name	Jennifer Randall
Phone	575-646-2920
Organization Email	jrandall@nmsu.edu
Organization Fax	N/A

Mailing Address

Street: 945 College Avenue NMSU

City: Las Cruces State: NM Zip: 88003

PROJECT TITLE

High Speed automated screening of aflatoxins in pistachios during harvesting and throughout crop processing

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

New Mexico State University.
Agricultural crops including nuts, grains, legumes are often contaminated with a mycotoxins (i.e. aflatoxin), which presents risks when in the food supply to the health of animals and humans. Aflatoxin is regulated in crops, food items, and animal feed through expensive and laborious methods. Economic impacts from both regulatory standards and loss of crops contaminated by aflatoxins are large. Technology and methods for high speed detection of sub-ppb levels of aflatoxins directly during processing of pistachios has been developed and patented by New Mexico State University for researchers Randall and Eiceman. Field trials have encouraged implementation of the technology in crop production and additional innovation for reduced size, weight, power, and cost.

We plan to build on successful automated sample processing with new embodiments of aflatoxin detection where the large, facility-suitable mass spectrometers with helium-based ionization methods (as found in our patent "Apparatus and method for agricultural contaminant detection," USPTO 11862447) are replaced with emerging, advanced, small technologies based on tandem reactive stage ion mobility spectrometers and helium free ion sources.
Our goal is reduced expense of operation, lower cost of ownership, and increased portability where aflatoxin testing could be done using mobile platforms suitable for in-field use during harvesting or even before scanning a grove before harvesting.

Note: the patent USPTO 11862447 was organized through Arrowhead Research at NMSU after more than five years of development by Randall, Eiceman and team and is currently under early stage commercialization.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

Mycotoxins are a family of compounds that are toxic to humans and animals and are produced by soil borne fungal organisms (specifically Aspergillus flavus and Aspergillus parasiticus). Agricultural crops including nuts, grains, legumes, and fruit are often contaminated with mycotoxins. One specific mycotoxin, aflatoxin, is both a carcinogen and mutagen. As these compounds harm human and animal health, their presence in food supplies and animal feed are highly regulated. In the US, any foods or animal feeds that contains an aflatoxin level of 20 ppb or higher are considered unfit for consumption and are destroyed.

Aflatoxin testing of crops/food items are performed in a destructive fashion where a representative portion of the crop or product is chemically extracted and tested using a LC-MS, an HPLC, ELISA (Miklos et al., 2020). Although these destructive testing methods are well-established, the methods have several drawbacks including i) the sample that is tested is destroyed and ii) that there is a possibility that aflatoxin may be missed when a representative sample is tested and may be found on re-testing elsewhere.

We have developed technology and methods for continual non-destructive automated monitoring of aflatoxins in pistachios to alert growers of crop contamination prior to regulatory testing (patent USPTO 11862447). This first ever capability for automated real-time analyses is under advanced development (Spring 2024) with pilot plant testing at a pistachio production facility. While successful during preliminary field trials, the method is expensive and is used only after crop has entered silos and production lines. We seek another development where aflatoxins are detected during harvesting and off-loading of crop at a processing facility as a means of insuring clean conditions at the very beginning of pistachio production.
Our new strategy, the topic of this research request, is based on ion mobility spectrometry (IMS) which is an ambient pressure analog to mass spectrometry. This gas ion-based method has been widely adopted in military preparedness and commercial aviation security for analyte specific detection, much as we seek in this application. Technology embodiments of IMS are compact, mil-spec rugged, and have prior applications in food production, though not with pistachios for aflatoxins.

We propose to determine if innovations on embodiments of ion mobility spectrometry can provide rapid, reliable, in-field measurements of aflatoxin in pistachios in NM. We will seek advances in our existing methods and technology with small, inexpensive, and portable IMS analyzers, also built at NMSU. After a stage of technology development, performance will be benchmarked for capabilities and use in-field studies during harvesting and even before harvesting.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective
-	1	Experimentally determine the IMS modifications and parameters as compared to the current technology we have designed for detecting aflatoxins in pistachios. We will use our sample handling developed in our patented method.
-	2	Evaluate the new mobile IMS technology performance in pistachio orchard production.
-	3	Evaluate the new IMS technology performance in pistachio plant operations.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries.	800
Does this project directly benefit underserved farmers as defined in the RFA?	Yes

Does this project directly benefit beginning farmers as defined in the RFA? Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project? No

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

The current technology that we have developed for continual and non-destructive monitoring of aflatoxin has been paid by a private sponsor who wants to market the technology for growers (see patent (USPTO 11862447). There is a plan in progress to establish a commercial company in NM to begin marketing instruments for continual and non-destructive aflatoxin measurements from crops. The data from this proposal will be used to help establish a rugged and inexpensive instrument that will be marketed to growers and producers in NM and throughout the United States for continual aflatoxin detection. This instrument will have a positive benefit as it will allow growers to know what products may have aflatoxin prior to regulatory testing and it will allow consumers to have an increased confidence in the safety of their food. The new approach should enable growers in New Mexico access to advanced chemical analysis for aflatoxins in their crops with high speed, high convenience, and comparatively low cost. The technology should be suitable for use by non-specialists in chemical measurements and provide early awareness of high levels of aflatoxins in crops. This technology will be useful for several different crops/grain commodities that require aflatoxin testing.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

The economic loss of agricultural crops due to the presence of aflatoxin costs growers in the USA approximately 1 billion dollars/year. The health impacts due to human or animal exposure to aflatoxin can be severe. As aflatoxin detection is important for most crop industries, we anticipate that having this technology that will be suitable for non-destructive testing will greatly help the specialty crop growers in NM (current and future), processors, food manufacturers and consumers.

This project will build on the now patented revolutionary capability where pistachios can be monitored continuously and automatically for trace levels of aflatoxins during processing. While this method has been shown successful, the technology is large and suitable for use only in production facilities. The patented process and commercialization is being funded by anonymous private entities. We seek to innovate and develop new technology and methods that permit measurements to be done in-field during harvesting and before crops are delivered to processing facilities. We received letters of support from Michael Kusmak, President of TPG and Sidney Gordon an Extension agent.
Reduced cost and size will also impact current capabilities for in-facilities measurements and make the technology and capabilities affordable to small and medium size producers. This technology and its impact on food safety will benefit all areas of industry including producers, shellers (processing plants), and consumers.

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☐

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ☐

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ■

Indicators	Value	N/A
3.1 Number of stakeholders that gained knowledge about prevention, detection, control, and/or intervention food safety practices, including relevant regulations (to improve their ability to comply with the Food Safety Modernization Act (FSMA) and/or meet the standards for aligned third party food safety audits such as Harmonized GAP/GHP)	800	☐
3.2 Number of stakeholders that:		■
3.2a Established a food safety plan		■
3.2b Revised or updated their food safety plan		■
3.3 Number of specialty crop stakeholders who implemented new/improved prevention, detection, control, and intervention practices, tools, or technologies to mitigate food safety risks (to improve their ability to comply with the Food Safety Modernization Act (FSMA) and/or meet the standards for aligned third party food safety audits such as Harmonized GAP/GHP)	70	☐

Indicators	Value	N/A
3.4 Number of prevention, detection, control, or intervention practices developed or enhanced to mitigate food safety risks		■
3.5 Number of stakeholders that used grant funds to:		■
3.5a Purchase		■
3.5b Upgrade food safety equipment		■

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ☐

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ☐

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ☐

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

1. Experimental determination of IMS with paper-spray. Controlled laboratory experiments will be performed using pistachio nuts and aflatoxin standards. Clean nuts will be used as controls and compared to pistachios spiked with different concentrations of aflatoxin. The experiment will be performed at least 10 times the paper-spray IMS to confirm that this is a reliable detection method and compared to industry standard methods. The results will be reported to the agricultural industry as a whole with talks and reports.

2. Experimentally determine the conditions for measurements with IMS using our high-speed novel inlet. Non-destructive analyses will be evaluated using our novel inlet that can will be determined (provisional patent # 63/315, 384). Controlled experiments with pistachios will be performed in the presence and absence of aflatoxin. The patented instrument will be used to detect aflatoxin on pistachio will be used to verify that aflatoxin can be experimentally and non-destructively detected. Then the inlet will be attached to the IMS and non-destructive measurements of aflatoxin from standards and pistachios will be done. We anticipate that this will require some trouble-shooting. Once this is accomplished and we are detecting aflatoxin then the experiment will be performed at least 10 times. The results will be reported to different sections of the agricultural industry with oral presentations, reports, and a website explaining the research. The website link will be shared via a QR code or other means and the website will keep track of industry participation.

Evaluate IMS under in-field or on-site environments to bring measurements close to producers (Pistachio orchards, New Mexico). The IMS device with both paper-spray and with the special inlet will be taken to grower pistachio orchards for on-site detection of aflatoxin with pistachios. In this case, we will use the ELISA system to validate the IMS tests with aflatoxin at the field site.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested
Personnel	$70,000.00
Fringe Benefits	$23,715.00
Travel	$556.00
Equipment	$0.00
Supplies	$9,396.00
Contractual	$0.00
Other	$0.00
Direct Costs Sub-Total	**$103,667.00**
Indirect Costs	$0.00
Total Budget	**$103,667.00**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Dr. Gyoungil Lee	65%	$65,000.00
-	2	Undergraduate	50%	$5,000.00
-	3	Dr. Gary Eiceman	<5%	$0.00
-	4	Dr. Jennifer Randall	<5%	$0.00
Personnel Subtotal				**$70,000.00**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: Dr. Gyoungil Lee is a senior research associate in the lab of Dr. Eiceman. He is a trained physicist and is highly experienced in analytical technique development. Dr. Lee will work directly with this project in developing the paper-spray IMS, and making the measurements. He will also work with engineering the provisional patent inlet (provisional patent 63/315,384) and will connect this technology to the IMS. He will make the measurements with the inlet and the IMS.

Personnel 2: An undergraduate student will be hired to assist.

Personnel 3 and 4: Dr. Jennifer Randall and Dr. Gary Eiceman will also be the main PI's on this work and will oversee all aspects and not requesting salary. Dr. Eiceman will actively contribute to the intellectual design of the IMS. Dr. Jennifer Randall is not requesting salary but will perform testing, budget monitoring, and will ensure work and reports are completed. Neither professors are requesting funds on this grant.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Dr. Gyoungil Lee **(Note: FB rates for NMSU are likely to change after July 1, 2024 and therefore there may be overages in this budget category reported in the future. Funds from other budget categories may be utilized to cover the overages of the increase in FB, without going over the total budget and while still adhering to the AMS Grant Terms and Conditions).**	36	$23,400.00
-	2	Undergraduate Student	0.63	$315.00
-	3	Dr. Gary Eiceman	0	$0.00
-	4	Dr. Jennifer Randall	0	$0.00
Fringe Subtotal				**$23,715.00**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Las Cruces, NM to Tularosa, NM	mileage	miles	830	$0.67	1	$556.00
Travel Subtotal								**$556.00**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Trip 1: There will be ten trips to Tularosa, NM/Alamogordo, NM for site detection of aflatoxin. Dates have not been determined but estimated to be 07/15/25; 07/17/25; 08/12/25; 08/29/25; 07/15/26; 07/17/26; 08/12/26; 08/29/26. Request is for the accepted $ 0.67 for mileage. It is approximately 166 miles round trip from NMSU to Tularosa, NM. We will need to travel approximately 5 times (round trip) for the time of this grant.

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. "Special purpose equipment" is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of "general purpose equipment" must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Solvents (methanol)	$300.00	2	10/20/2024	$600.00
-	2	Seriological Pipets	$80.00	1	11/15/2024	$80.00
-	3	Disposable glass vials	$100.00	2	11/15/2024	$200.00

-	4	Conical tubes	$271.00	1	11/15/2024	$271.00
-	5	Compressed Gas	$1,200.00	2	11/2024-09/2025	$2,400.00
-	6	Petri Dishes	$170.00	1	02/15/2025	$170.00
-	7	Electronic Components	$300.00	1	11/15/2024	$300.00
-	8	Pipette Tips	$35.00	3	11/15/2024	$105.00
-	9	Materials to fabricate IMS	$1,200.00	1	11/15/2024	$1,200.00
-	10	Tools for instrument fabrication	$350.00	1	11/15/2024	$350.00
-	11	Heat control	$700.00	1	11/15/2024	$700.00
-	12	pH buffers	$40.00	1	02/15/2025	$40.00
-	13	Interface card for computer	$1,200.00	1	11/15/2024	$1,200.00
-	14	Flow control monitors	$1,200.00	1	11/15/2024	$1,200.00
-	15	Swagelok fittings	$280.00	1	11/15/2024	$280.00
-	16	ELISA Kits	$300.00	1	02/15/2025	$300.00
Supplies Subtotal						**$9,396.00**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supply 1: Solvents Methanol, Ethanol, etc Needed for extraction of aflatoxin

Supply 2: Pipet Apparatus to transfer liquid

Supply 3: Disposable small glass vials needed for sample storage

Supply 4: Conical Tubes 50 ml plastic tubes needed for extraction and sample storage.

Supply 5: Compressed gas helium needed for LC-MS operations

Supply 6: Plastic petri dishes to grow cultures, growing Aspergillus flavus from pistachio and pecans

Supply 7: Electronic Components required for manufacturing IMS components

Supply 8: Pipette Tips Fit onto pipettemen used for transfer of small volumes

Supply 9: Materials to fabricate IMS

Supply 10: Heat control. Needed to heat materials for IMS.

Supply 11: Tools to make instrument needed to manufacture IMS and components

Supply 12: pH Buffers are used to calibrate pH meters so that buffers and media are the appropriate pH

Supply 13: Interface card for computers required for development of IMS interface

Supply 14: Flow control monitors ensure that there is flow control to the instrument

Supply 15: Swagelok fittings needed to connect instrument components

Supply 16: ELISA Kits: Used to validate field testing of aflatoxin

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-					
Contractual/Consultant Subtotal					

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-						
Other Subtotal						

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested

Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			

Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

AWARD YEARS 2022 FORWARD

The State Plan should include a series of project profiles that detail the necessary information to fulfill the goals and objectives of each project. The following information must be included in each project profile.

ORGANIZATION DETAIL

Organization Name	Reunity Resources
Organization Contact Name	Juliana Ciano
Phone	505-428-8330
Organization Email	juliana@reunityresources.com
Organization Fax	N/A

Mailing Address

Street: 1829 San Ysidro Crossing

City: Santa Fe State: NM Zip: 87507

PROJECT TITLE

Education on Codling Moth Remediation through Organic Integrated Pest Management Techniques in an Historic Agua Fria Village Orchard

DURATION OF PROJECT

Start Date	09/30/2024
End Date	09/29/2027

PROJECT PARTNER AND SUMMARY

Include a project summary of 250 words or less suitable for dissemination to the public. A Project Summary provides a very brief (one sentence, if possible) description of your project. A Project Summary includes:

1. The name of the applicant organization that if awarded a grant will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute the project;
2. The project's purpose, deliverables, and expected outcomes; and
3. A description of the general tasks/activities to be completed during the project period to fulfill this goal.

FOR EXAMPLE: The ABC University will mitigate the spread of citrus greening (Huanglongbing) by developing scientifically-based practical measures to implement in a quarantine area and disseminating results to stakeholders through grower meetings and field days.

Reunity Resources, a closed-loop regenerative farm, commercial compost and soil yard, and environmental education center in the historic Village of Agua Fria, will design, implement and educate about an integrated pest management plan using organic methods to address codling moth damage in both their newly planted and historic (dating to the 1940's) orchards, where 75% of trees suffer from the pest. Codling moths are the most serious insect pest for apple and pear trees in New Mexico. Results of the project will be widely shared with Reunity's many agricultural partners and organizations including the Santa Fe Extension Master Gardeners Network, Santa Fe Community College interns, and the general public through workshops, our emails, social media posts, with an explainer video on our website, during public Root to Fruit Farm Tours and workshops, as well as to tree care specialists and land stewards through peer-to-peer

education and in annual conferences including Think Trees, REGENERATE, and the New Mexico Farmers' Marketing Association (NMFMA). We will apply a combination of techniques to our trees, collecting data prior to intervention and at regular intervals throughout. We will clearly describe the techniques we apply and synthesize its impacts into engaging workshops, a slide deck and video so that our results can positively benefit many orchards.

The anticipated improvement in fruit quality and increase in harvest volume will be kept whole, or preserved in various ways in Reunity's certified kitchen, ultimately increasing the volume of food available.

PROJECT PURPOSE

PROVIDE THE SPECIFIC ISSUE, PROBLEM, OR NEED THAT THE PROJECT WILL ADDRESS *(5000 Character Limit)*

Reunity Resources models a closed-loop system including a commercial compost yard, a 2.5 acre regenerative, biodiverse farm (featuring over 50 fruit and vegetable varieties) supplying an onsite farm stand, and multiple food access programs. We offer environmental education through a summer farm camp and farm tours, an engaging volunteer program, public events, and youth workforce development/young farmer training. The farm is a centrally located and beautiful community gathering place located in the traditional Village of Agua Fria, a federally identified opportunity zone and low income area. A farming community for thousands of years, Reunity now operates the only remaining farm, hosting many events, workshops and educational opportunities for the public to participate in.

The farm has operated since the 1940's, though Reunity's stewardship began in 2019. The land was neglected over the preceding decade, including the historic orchard. We added an edible windbreak at field perimeters with fruit trees, shrubs, grasses and a variety of edible native and adaptive perennials. Through the application of our nutrient rich compost (created through an innovative aerated static pile system), no till methods, cover cropping, crop rotation and other regenerative techniques, the land has undergone a significant and visually impressive transformation in just a few short years.

Unfortunately, this approach has been less effective for combating codling moth, an ever present pest in fruit orchards around New Mexico. The orchard at Reunity is predominantly apples, with Red and Golden Delicious, Winesap and Mcintosh varieties. There are several varieties of pear, cherry, apricot and peach comprising about 20% of the total orchard. Presently, over 75% of the orchard is suffering from the insect. Not only does the infestation make the fruit unusable, according to University of California's Integrated Pest Management site, "Codling moth can be very difficult to manage, especially if the population has been allowed to build up over a season or two. It is much easier to keep moth numbers low from the start than to suppress a well-established population." Reunity's orchard has been challenged with this pest since before the farm was purchased.

In partnership with Chris Seidel of Koa Landscaping, fruit tree specialist, we'll design a comprehensive integrated pest management plan for the orchard, to be implemented over three years. The plan includes a variety of known organic interventions such as: sanitation and fruit bagging, thinning and removing infested fruit, pruning trees to a height where the canopy is easy to reach, trunk banding and biological controls. In addition, we'll explore chelated iron, azomite, kaolin clay applications and pheromone interrupters (delta traps). Soil amendments will continue to be added, in addition to cultivating orchard grass, because soil health improves tree health and therefore pest resilience. We may use sap analysis as a data indicator for overall tree health.

Implementation will be conducted by our farm crew of 4-5 beginning farmers, as well as interns from the YouthWorks Youth Conservation Corps and Santa Fe Community College Sustainable Technologies Program. They will be responsible for conducting all approved plan methods, as well as monitoring and data collection, with oversight by Koa Landscaping.

Implementation, progress and results will be documented for distribution through our email newsletter (3,385 subscribers) and social media (7,013 followers). Methods will be taught and shared to participants of our free Root to Fruit Farm Tours (and school field trips), as well as attendees of our summer Farm Camp, will be informed about the project, and if/when possible involved in the implementation. Collaboration and partnership is core to our work, so results will be shared with our local extension office, Master Gardeners, Quivira Coalition, NMFMA, Santa Fe Farmers' Market Institute, as well as the farm partners whose products we represent at the Farm Stand. We will create an engaging video that summarizes our results and how our approaches can be applied to orchards across New Mexico.

Our certified kitchen is outfitted with food preservation equipment, including a cider press, canning and dehydrating tools. We hope the improved harvest quality and volume will make more fresh and healthy food available year-round in our community.

The farm is gaining recognition for its regenerative and holistic approach to high desert farming. Our compost products visibly demonstrate our commitment and expertise in soil health. We have received Western SARE funding to document our methods for improving soil and USDA funding to utilize our kitchen to rescue and process produce seconds. We are confident this orchard remediation education project will impact many orchards through northern NM and the region, broadly benefiting the community and partners we serve.

PROVIDE A LISTING OF THE OBJECTIVES THAT THIS PROJECT HOPES TO ACHIEVE

Include as many objectives as needed. To add another objective, use the "+" button. To delete, use the "-" button.

+	#	Objective

-	1	Demonstrate effective integrated pest management in apple orchards infested with codling moth.
-	2	Share methods and results of the project as broadly as possible, with fruit tree specialists, land stewardship conference attendees, orchard stewards, home gardeners and the general public.
-	3	Provide learning opportunities for the farm crew, farm interns, partners, farm camp students and the general public regarding organic and regenerative integrated pest management for orchards.
-	4	Cultivate a resilient and healthy orchard to be enjoyed for future generations.
-	5	Improve crop quality across apple orchards in New Mexico through training many stakeholders in integrated pest management best practices for codling moth.

PROJECT BENEFICIARIES

Estimate the number of project beneficiaries.	1200
Does this project directly benefit underserved farmers as defined in the RFA?	Yes
Does this project directly benefit beginning farmers as defined in the RFA?	Yes

STATEMENT OF ENHANCING SPECIALTY CROPS

By checking the box to the right, I confirm that this project enhances the competitiveness of specialty crops in accordance with and defined by the Farm Bill. Further information regarding the definition of a specialty crop can be found at www.ams.usda.gov/services/grants/scbgp. ☒

CONTINUATION PROJECT INFORMATION

Does this project continue the efforts of a previously funded SCBGP project?	No

If you have selected "yes", please address the following:

PROVIDE THE AWARD NUMBER(S) AND PROJECT TITLES PREVOUSLY FUNDED *(1000 Character Limit)*

DESCRIBE HOW THIS PROJECT WILL DIFFER FROM AND BUILD ON THE PREVIOUS EFFORTS *(2500 Character Limit)*

PROVIDE A SUMMARY (3 TO 5 SENTENCES) OF THE OUTCOMES OF THE PREVIOUS EFFORTS *(1500 Character Limit)*

PROVIDE LESSONS LEARNED ON POTENTIAL PROJECT IMPROVEMENTS *(1500 Character Limit for each question)*

What was previously learned from implementing this project, including potential improvements?

How are the lessons learned and improvements being incorporated into the project to make the ongoing project more effective and successful at meeting goals and outcomes?

DESCRIBE THE LIKELIHOOD OF THE PROJECT BECOMING SELF-SUSTAINING AND NOT INDEFINITELY DEPENDENT ON GRANT FUNDS *(1500 Character Limit)*

Reunity's programs are designed with iteration, sustainability and scalability in mind. Fee for service programs, such as the soil yard, help to support our mission-driven programs such as our food access and environmental education programs, and Reunity Resources as a whole aims to be an economically self-sustaining business model. The practices we employ can be scaled both up and down, for home/school implementation, for sizing up each season as we increase our farm partners and yields, and for regional replication to allow for efficient and localized processing and distribution for farmers throughout the state.

This particular project, once we determine which methods are most effective, will be included in the operating costs for the farm. Presumably the increase in fruit production and subsequent sales will offset the increased pest management expenses.

OTHER SUPPORT FROM FEDERAL OR STATE GRANT PROGRAMS

The SCBGP will not fund duplicative projects. Did you submit this project to a Federal or State grant program other than the SCBGP for funding and/or is a Federal or State grant program other than the SCBGP funding the project currently?	No

IF YOUR PROJECT IS RECEIVING OR WILL POTENTIALLY RECEIVE FUNDS FROM ANOTHER FEDERAL OR STATE GRANT PROGRAM *(1500 Character Limit for each question)*

Identify the Federal or State grant program(s).

Describe how the SCBGP project differs from or supplements the other grant program(s) efforts.

EXTERNAL PROJECT SUPPORT

Describe the specialty crop stakeholders who support this project and why (other than the applicant and organizations involved in the project). *(1500 Character Limit)*

Environmental Education participants (ages 3-80) in tours, field trips, Farm Camp and service learning projects (estimated 5,500 annually).

YouthWorks and Community College interns (8-15 youth ages 17-25).

Farm partners whose produce and value-added products are offered for sale at our Farm Stand and included in our food access programs. (Currently 15 area farms, we aim to double that number over three years through a USDA grant.)

Food Access program participants WIC, Senior FMNP, FreshRx and Double Up Food Bucks

Organizational partners, like Quivira Coalition, NMFMA, and the Farmers' Market Institute will receive project results for sharing with their networks. We will present our findings at regional conferences such as Think Trees, Quivira Coalition's REGENERATE Conference and the NMFMA's annual conference (est. combined attendance 1200). Master Gardeners will share these techniques and our educational resources when they regularly table at many nurseries reaching over 2,000 individual gardeners annually, the Botanical Garden and the Farmers' Market Institute have agreed to share the findings through their adult education courses (over 400 attendees annually).

Finally, an engaging video documenting the project will detail how one can apply the IPM techniques we've tested for improved tree health, crop quality and volume. This will be available through our social channels and website (unduplicated audience of 5,000 and average of 100 website views daily).

EXPECTED MEASURABLE OUTCOMES

SELECT THE APPROPRIATE OUTCOME(S) AND INDICATOR(S)/SUB-INDICATOR(S)

You must choose at least one of the seven outcomes listed in the SCBGP Performance Measures, which were approved by the Office of Management and Budget (OMB) to evaluate the performance of the SCBGP on a national level.

OUTCOME MEASURE(S)

1. INCREASING CONSUMPTION AND CONSUMER PURCHASING OF SPECIALTY CROPS ☐

2. INCREASING ACCESS TO SPECIALTY CROPS AND EXPANDING SPECIALTY CROP PRODUCTION AND DISTRIBUTION ☐

3. INCREASE FOOD SAFETY KNOWLEDGE AND PROCESSES ☐

4. IMPROVE PEST AND DISEASE CONTROL PROCESSES ■

Indicators	Value	N/A
4.1 Number of stakeholders that gained knowledge about science-based tools to combat pests and diseases	800	☐
4.2 Number of stakeholders that adopted pest and disease control best practices, technologies, or innovations		■
4.3 Number of stakeholders trained in early detection and rapid response practices to combat pests and diseases, and of those:		■
4.3a the number of additional acres managed using integrated pest management		■
4.4 Number of stakeholders that implemented new diagnostic systems, methods, or technologies for analyzing specialty crop pests and diseases		■
4.5 Total number of producers/processors that enhanced or maintained pest and disease control practices, and of those, the number that reported:		■
4.5a Reduction in product lost to pest and diseases		■
4.5b Improved crop quality		■
4.5c Reduction in labor costs		■
4.5d Reduction in pesticide use		■
4.6 Number of producers/processors improving the efficiency of pest and disease control diagnostics and response testing, as reported by:		■
4.6a Improving speed		■
4.6b Improving reliability		■
4.6c Expanding capability		■
4.6d Increasing testing (i.e. survey work for pests)		■

5. DEVELOP NEW SEED VARIETIES AND SPECIALTY CROPS ☐

6. EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT ☐

7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS ■

Indicators	Value	N/A
7.1 Number of stakeholders that gained knowledge about environmental sustainability best practices, tools, or technologies	800	☐
7.2 Number of stakeholders reported with an intent to adopt environmental sustainability best practices, tools, or technologies	200	☐
7.3 Number of producers that adopted environmental best practices or tools		■

Indicators	Value	N/A
7.4 Number of new tools/technologies developed or enhanced to improve sustainability/ conservation or other environmental outcomes		■
7.5 Number of additional acres managed with sustainable practices, tools, or technologies that focused on:		■
7.5a Water quality/ conservation		■
7.5b Soil health		■
7.5c Biodiversity		■
7.5d Reduction in energy use		■
7.5e Other positive environmental outcomes (optional)		■
7.6 Number of additional acres established and maintained for the mutual benefit of pollinators/specialty crops		■

ADDITIONAL APPROVED OUTCOME (IF APPLICABLE) ☐

MISCELLANEOUS OUTCOME MEASURE *(1500 Character Limit)*

In the unlikely event that the outcomes and indicators above the selected outcomes are not relevant to your project, you must develop a project-specific outcome(s) and indicator(s) which will be subject to approval by AMS.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS *(2000 Character Limit)*

Explain how you will collect the required data to report on the outcome and indicator in the space below. Please refer to SCBGP Performance Measures for information on data collection tips for each outcome indicator selected.

Outcome 4, Indicator 4.1
Outcome 7, Indicators 7.1, 7.2
4.1, 7.1: During our workshops and presentations, we will track attendance and conduct pre and post surveys about what was learned during the workshop.
7.2 We will include a survey at the end of our workshops, presentations and outreach efforsts asking how many people will integrate this process to their own orchard.

Beyond the above, project impact data collected may include tracking website, YouTube and social media engagement with our video and educational posts, as well as tracking the number of interns and volunteers trained in these orchard care methods, attendees at our Root to Fruit Farm Tours, student and adult workshops on the farm, attendees at the conferences we present at and recipients of education through partners such as the Santa Fe Master Gardeners. Chris Seidel of Koa Landscaping will track the number of professional arboriculturists reached through his network. We will also share a survey via email to all tracked/identified participants with follow up questions regarding application/integration of these methods in their home orchards or orchards they care for.

We will also collect data regarding orchard health. We will measure data such as codling moth eggs found in banding, weights of fallen/ infected fruit, as well as harvested healthy fruit and anticipated increases in production, number (and changes) of trees affected by codling moth, and cause and effect relationships identified with various techniques. This data will provide the core of the report and video we create.

BUDGET NARRATIVE

All expenses described in this Budget Narrative must be associated with expenses that will be covered by the SCBGP. If any matching funds will be used and a description of their use is required by the State department of agriculture, the expenses to be covered with matching funds must be described separately. Applicants should review the Request for Applications (RFA) section on *Funding Considerations* prior to developing their budget narrative.

Expense Category	Funds Requested
Personnel	$13,715.60
Fringe Benefits	$3,428.24
Travel	$395.40
Equipment	$0.00
Supplies	$3,850.05
Contractual	$58,800.00
Other	$1,152.00
Direct Costs Sub-Total	**$81,341.29**
Indirect Costs	$0.00
Total Budget	**$81,341.29**

PERSONNEL

List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that enhance the competitiveness of specialty crops. If the listed employee's salary/position will not be paid with SCBGP funds list $0.00 in the Funds Requested column. See the RFA section on *Presenting Direct and Indirect Costs Consistently and Allowable and Unallowable Costs and Activities* for further guidance. Fill personnel information in space below as needed.

+	#	Personnel Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
-	1	Sian Beck, Farm Manager	4.5 % (48 hours/year)	$3,428.90
-	2	Kipling McLement, Farm Crew	4.5 % (48 hours/year)	$3,428.90
-	3	Charles Wolf, Communications and Marketing Manager	4.5 % (48 hours/year)	$3,428.90
-	4	Marc Reynolds, Education Manager	4.5 % (48 hours/year)	$3,428.90
Personnel Subtotal				**$13,715.60**

PERSONNEL JUSTIFICATION *(2000 Character Limit)*

For each individual listed in the above table, describe the activities to be completed by name/title including approximately when activities will occur. Add more personnel by copying and pasting the existing listing or deleting personnel that aren't necessary.

FOR EXAMPLE:
Personnel 1: Description and justification
Personnel 2: Description and justification

Personnel 1: Sian Beck, Farm Manager, and Personnel 2: Kipling McLement, Farm Crew, will work under the supervision of Chris Seidel of Koa Landscaping to implement the agreed upon integrated pest management protocols on the orchard over three seasons. They will also supervise and train additional farm crew, farm interns and volunteers on the hows and whys of the processes we are applying to the orchard to further disseminate knowledge of codling moth management.

Personnel 4: Marc Reynolds, Education Manager, will work under the supervision of Chris Seidel to gather data rigorously, design and lead workshops and trainings, and compile instructions into a written report and then partnering with Personnel 3: Charles Wolf, Communications and Marketing Manager, to create an engaging video explaining the IPM methods and associated results. Mr. Wolf will share both the written report and the video widely through online and social media channels, as well as include this information in public Root to Fruit tours and farm events.

FRINGE BENEFITS

Provide the fringe benefit rates, in percentages, for each of the employees described in the Personnel section that will be paid with SCBGP funds.

+	#	Fringe Benefits Name/Title	Fringe Benefit Rate	Funds Requested
-	1	Sian Beck, Farm Manager	25	$857.06
-	2	Kipling McLement, Farm	25	$857.06
-	3	Charles Wolf, Communications and Marketing Manager	25	$857.06
-	4	Marc Reynolds, Education Manager	25	$857.06
Fringe Subtotal				**$3,428.24**

TRAVEL

Explain the purpose for each Trip Request. Please note that travel costs are limited to those allowed by formal organizational policy; in the case of air travel, project participants must use the lowest reasonable commercial airfares. For recipient organizations that have no formal travel policy and for-profit recipients, allowable travel costs may not exceed those established by the Federal Travel Regulation, issued by GSA, including the maximum per diem for lodging and meals and incidental expenses (M&IE) and mileage rates prescribed in those regulations. This information is available at http://www.gsa.gov/travel. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance. For all trips, please list each cost item (airfare, car rental, meals, hotel, etc.) associated with that trip number on a separate line. Please do not combine costs like airfare and hotels on the same line.

+	#	Trip Destination	Type of Expense (e.g., airfare, car rental, hotel, etc.)	Unit of Measure (e.g., days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming Expense	Funds Requested
-	1	Think Trees Conference, Albuquerque, NM	hotel	night	1	$250.00	1	$250.00
-	2	Think Trees Conference, Albuquerque, NM	mileage	miles	120	$0.67	1	$80.40
-	3	Think Trees Conference, Albuquerque, NM	per diem	days	1	$65.00	1	$65.00
Travel Subtotal								**$395.40**

TRAVEL JUSTIFICATION *(2000 Character Limit)*

For each trip listed in the above table, describe the purpose of this trip and how it will achieve the objectives and outcomes of the project. Be sure to include approximately when and where the trip will occur and who will be traveling. If the location is not yet known, please use "to be determined (TBD)". If you are not using GSA rates, please include how you arrived at the rate numbers. For example, it might be including tax for the hotel or University travel policy. Add more trips by copying and pasting the existing listing or delete trips that aren't necessary.

FOR EXAMPLE:
Trip 1: (Approximate Date of Travel MM/YYYY), justification
Trip 2: (Approximate Date of Travel MM/YYYY), justification

Trip 1,2,3: In year three, we will submit our project and results to three conferences as presenters (Marc Reynolds presenting). These include the Think Trees conference in Albuquerque, the REGENERATE conference (location TBD) and the NM Farmers Marketing Association conference in Santa Fe. As such, we are anticipating a single trip to Albuquerque for the Think Trees conference, and will find other funding to support travel to the REGENERATE conference if the location requires travel (in 2023, this conference was also held in Santa Fe).

CONFORMING WITH YOUR TRAVEL POLICY

By checking the box to the right, I confirm that my organization's established travel policies will be adhered to when completing the above-mentioned trips in accordance with 2 CFR 200.474 or 48 CFR subpart 31.2 as applicable. ☒

EQUIPMENT

Describe any special purpose equipment to be purchased or rented under the grant. “Special purpose equipment” is tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $5,000 per unit and is used only for research, medical, scientific, or other technical activities. If the acquisition cost of the item is less than $5,000 then the item is considered a supply and should be listed in that section. Rental of “general purpose equipment” must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See the RFA section on *Allowable and Unallowable Costs and Activities* for further guidance.

+	#	Equipment Item Description	Rental or Purchase	Acquisition Date	Funds Requested
-					
Equipment Subtotal					

EQUIPMENT JUSTIFICATION *(2500 Character Limit)*

For each Equipment item listed in the above table describe how this equipment will be used to achieve the objectives and outcomes of the project. Please be sure to address the allow-ability criteria for each equipment item as indicated in the AMS Terms and Conditions.

FOR EXAMPLE:
Equipment 1: Description and justification
Equipment 2: Description and justification

SUPPLIES

List the materials, supplies, and fabricated parts costing less than $5,000 per unit, and describe how they will support the purpose and goal of the proposal and enhance the competitiveness of specialty crops. If the actual cost per unit or number of units is not known, please use your best estimate. This will assist Grants Management Specialists to better determine allowability. See the RFA section on *Allowable and Unallowable Costs and Activities*, for further guidance.

+	#	Supplies Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Kaolin Clay	$59.95	30	10/1/2024	$1,798.50
-	2	Scentry Traps	$21.50	9	03/1/2025	$193.50
-	3	Chelated Liquid Iron	$29.89	15	10/1/2024	$448.35

-	4	Azomite	$46.99	30	10/1/2024	$1,409.70
Supplies Subtotal						**$3,850.05**

SUPPLIES JUSTIFICATION *(3000 Character Limit)*

Describe the purpose of each supply listed in the table above and how it is necessary for the completion of the project's objective(s) and outcome(s). If it comes as a set, please include that in the justification. If you are combining costs (for example combining 15 items into one cost, you will need to provide a breakdown of items and how you arrived at the price listed in the table above).

FOR EXAMPLE:
Supply 1: Description and justification
Supply 2: Description and justification

Supplies included above are all necessary for the codling moth remediation in our orchards.

Supply 1: Kaolin Clay - for creating a thin coating on developing leaves and fruits: the film left behind either confuses the codling moths into thinking they're not on a surface for laying eggs on or it creates a barrier that makes it difficult for the microscopic larvae to penetrate the apple

Supply 2: Scentry Traps - Pheromone traps used for direct trapping of codling moth.

Supply 3: Chelated Liquid Iron - for trees with chlorosis, seeking a connection between chlorosis and codling moth

Supply 4: Azomite - remineralizing depleted soils, as a total soil health/tree health factor for improving pest resilience including codling moth

CONTRACTUAL/CONSULTANT

Contractual/consultant costs are the expenses associated with purchasing goods and/or procuring services performed by an individual or organization other than the applicant in the form of a procurement relationship. If there is more than one contractor or consultant, each must be described separately.

Create a new line for each contractor/consultant. Provide a list of contractors/consultants, detailing out the name, hourly or flat rate, and overall cost of the services performed. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

+	#	Contractual Name/Organization	Hourly Rate/Flat Rate	Rate Value	Funds Requested
-	1	Koa Landscaping, Chris Seidel	Hourly Rate	$80.00	$58,800.00
Contractual/Consultant Subtotal					**$58,800.00**

CONTRACTUAL JUSTIFICATION *(2000 Character Limit)*

Provide for each of your real or anticipated contractors listed above a description of the project activities each will accomplish to meet the objectives and outcomes of the project. Each section should also include a justification for why contractual/ consultant services are to be used to meet the anticipated outcomes and objectives. Include timelines for each activity. If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area, provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See the RFA section on *Allowable and Unallowable Costs and Activities* for acceptable justifications. If the Contractor has not yet been identified or is TBD, please indicate how you will announce the opportunity, evaluate candidates, and select the contractor for the position/work to be completed.

FOR EXAMPLE:
Contractual 1: Description and justification
Contractual 2: Description and justification

Contractual 1: Chris Seidel, Koa Landscaping - Mr. Seidel will design and lead this program from the creation of the IPM program to the training of staff, interns and public, to data collection and educational series development and instruction. His services are necessary for the first two years of this program, in implementation of our IPM system for the orchard and design/leadership of educational workshops and digital materials. He will design a comprehensive integrated pest management plan, conduct and manage a majority of the project implementation, lead and train Reunity staff in specific project elements, design and lead workshops and hands-on learning opportunities for the aforementioned stakeholders, conduct and supervise data collection and analysis, present findings to his network of arborist and tree specialists. This project is a flat rate, based on his quote provided for one year of services. Mr. Seidel is highly qualified for this role as an ISA certified arborist who is committed to healthy tree education in our community.

CONFORMING WITH YOUR PROCUREMENT STANDARDS

By checking the box to the right, I confirm that my organization followed the same policies and procedures used for procurements from non-federal sources, which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 2 CFR Part 200.317 through.326, as applicable. If the contractor(s)/consultant(s) are not already selected, my organization will follow the same requirements. ☒

OTHER

Include any expenses not covered in any of the previous budget categories. Be sure to break down costs into cost per unit and number of units. Expenses in this section include, but are not limited to, meetings and conferences, communications, rental expenses, advertisements, publication costs, and data collection.

+	#	Other Item Description	Cost per Unit	Number of Units	Acquisition Date	Funds Requested
-	1	Tree Sap Analysis	$96.00	12	06/01/2025	$1,152.00
Other Subtotal						**$1,152.00**

OTHER JUSTIFICATION *(2000 Character Limit)*

Describe the purpose of each item listed in the table above purchased and how it is necessary for the completion of the project's objective(s) and outcome(s). For meals the costs must be reasonable, and a justification must be included to show that such activity maintains the continuity of the meeting and to do otherwise will impose arduous conditions on the meeting participants.

FOR EXAMPLE:
Other 1: Description and justification
Other 2: Description and justification

Other 1: A plant sap analysis provides insight in the actual uptake of nutrients by the plant. This reveals important information about the plant's health status. An optimal and balanced uptake of nutrients has a positive effect on the plant's natural pest and disease resistance and on the quality, firmness and shelf life of fruits.

INDIRECT COSTS

The indirect cost rate must not exceed 8 percent of the total Federal funds provided under the award per section 101(k)(2) of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. § 1621 note), as amended by section 10107 of the Farm Bill. Indirect costs are any costs that are incurred for common or joint objectives which cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. See the RFA section on *Limit on Administrative Costs* and *Presenting Direct and Indirect Costs Consistently* for further guidance.

Indirect Cost Rate	Funds Requested
Indirect Subtotal	

PROGRAM INCOME

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.

Describe how program income will be 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.

+	Source/Nature of Program Income	Description of how you will reinvest the program income into the project to enhance the competitiveness of specialty crops	Estimated Income
-			
Program Income Total			