Specialty Crop Block Grant Program Project Profile

Project Title (*15 words or less)*

Developing RNA Vaccines to Manage Pepino Mosaic Virus

Abstract - Include a project summary of 250 words or less suitable for dissemination to the public. It should include the need for the project, a brief description of the goals and outcomes, and your plan for evaluating and measuring the success of the project or program.

Partner with State University (the University) to explore the mechanisms of the induced resistance of Pepino mosaic virus in tomatoes and to develop novel immunization approaches to induce the resistance

Project Partner Organization - Include the name of the applicant organization that will establish an agreement or contractual relationship with the State department of agriculture to lead and execute the project.

XYZ State University

Project Purpose

- What is the specific issue, problem or need that the project will address?

Fresh tomato production in the U.S. is valued at $1.4 billion annually. Tomato production, particularly greenhouse tomato production, has expanded rapidly within the State between 2004 and 2008. However, the emergence of PepMV as a pathogen poses a serious challenge to the tomato industry. Infection by the virus affects the quality of fruit and reduces its size, which results in up to 38 percent of the tomato fruit becoming downgraded.

- Why is the project important and timely?

Some tomato plants have been observed to recover naturally from an early infection. These plants then exhibit neither the symptoms nor the effects of PepMV infection, and continue to produce normal tomato fruit without yield loss, as if they have become resistant. Scientists have observed similar recoveries from viral infections in other plant species. Studies in the last decade have revealed that this type of recovery is due to RNA interference (RNAi). RNAi has the ability to detect and degrade invading viral and other nucleic acids. If the recovery of tomato plants from an early PepMV infection is indeed a manifestation of RNAi-based resistance, it opens up the possibility of immunizing tomato plants with a sequence fragment or an attenuated strain of PepMV.

- What are the objectives of the project?

This one year project proposes to develop novel approaches to immunize tomato plants against Pepino mosaic virus (PepMV). Specific objectives are to determine if the naturally induced resistance in tomatoes is mediated by RNA-based immunity, develop two alternate vaccines that can effectively induce the resistance, protect tomato plants from PepMV, and eliminate the risk of late PepMV outbreaks.

- If any of the project activities or costs has the potential to enhance the competitiveness of non-specialty crops (ex: farmers market, general buy local, CSA etc.) describe the methods or processes you will

implement to verify all grant funds are expended on activities and costs that only enhance the competitiveness of eligible specialty crops. If you propose a cost-share or match to cover non-specialty crop activities and costs, include the specific costs or contributions proposed to meet the cost-share or match, the source of funding or contributions, and describe how you determined the appropriate amount of cost-share or match. See the Request for Applications section 3.8 Cost Sharing and Matching for guidance on documentation standards.

NA

- If the project is a continuation of a project that the Specialty Crop Block Grant Program (SCBGP) funded previously, describe how the project differs from and builds on the previous project's efforts. Describe also the likelihood of the project becoming self-sustaining and not indefinitely dependent on grant funds. Specifically, provide a summary (3 to 5 sentences per project) of the accomplishments of the previous project that have led you to seek continued funding.

NA

- Have you submitted the project to another Federal or State grant program other than the SCBGP for funding and/or is another Federal or State grant program other than the SCBGP funding the project currently?

    - If no, indicate that you have not.

    - If yes, identify the Federal and/or State grant program by name and describe how the new project differs from and supplements efforts of the SCBGP and the other Federal or State grant program rather than duplicates funding efforts. The SCBGP will not fund duplicative projects.

The University presently has received matching funds from the USDA Special Projects Grant Program to provide one-half salary for the Senior Research Specialist. This individual will coordinate most of the laboratory operations and perform a majority of the laboratory and greenhouse experiments. This project will not be a duplicative effort, but rather enhance the program by providing additional dollars to elevate the part-time position to full time status.

Potential Impact - This section must show how the project benefits the specialty crop industry and/or the public or multiple states rather than only a particular commercial product, single organization, institution, or individual.

- Who are the specialty crop beneficiaries of the project?

Tomato growers with smaller operations.

- How many specialty crop beneficiaries will the project benefit?

520 tomato growers in the state.

- How will the project benefit the specialty crop beneficiaries?

With 3,808,556 cartons produced in 2008, the tomato is one of the top ten commodities in the State. Diseases and pests have caused major problems for fresh tomato production in the State, resulting in financial hardship for some growers. Smaller growers are facing these problems as well. Developing effective and practical means to control PepMV, as proposed in this project, will provide timely and much needed assistance to the State tomato growers. By managing the viral disease, growers will be able to improve tomato yield and quality, consequently increasing profits. In turn, these operations will attract more businesses to the State, making the State's tomato industry more competitive.

- What is the potential economic impact of the project if it can be estimated?

It is estimated that every year at least 100,000 cartons of tomatoes do not make it to stores due to the Pepino Mosaic virus. With each carton of tomatoes selling for $24-26, we anticipate that in the long-run, once adoption of the vaccine is complete, the tomato industry will realize $2.4-$2.6 million in increased sales per year.

- If applicable, how will the project have a multi-state (benefitting two more or states) or national impact?

NA

Expected Measurable Outcomes - Provide at least one distinct, quantifiable, measurable project outcome that solely supports enhancing the competitiveness of eligible specialty crops. If the outcome measures are long-term and occur after the project's completion, then identify an intermediate outcome that occurs before the end of the grant period and that is expected to help lead to the fulfillment of long-term outcomes. For further information on expected measurable outcomes, please see the Outcomes Model or this Educational Bulletin.

- Provide a GOAL - A goal is what you hope to achieve as a result of conducting the activities and producing the outputs (tangible results that can be seen, touched, handled, or moved about) of the project. Examples of outcome-oriented goals could include a change in knowledge, change in behavior, change in conditions that make a difference for the beneficiaries of the project.

GOAL:

Help tomato growers increase tomato production by developing a vaccine to protect tomato plants from PepMV and disseminating information about the vaccine to over 100 growers at the 2017 annual Agricultural Center Field Day and over 1500 scientists at the 2017 annual American Phytopathology Meeting

- Provide a PERFORMANCE MEASURE. Identify a performance measure for each goal that you will use to measure the actual project results compared to the expected results. These are usually expressed in quantifiable terms and should be objective and measurable (numeric values, percentages, scores and indices, although in certain circumstances qualitative measures are appropriate).

PERFORMANCE MEASURE:

The success of the project will be measured by attendance at each of the presentations and by self-identified interest amongst tomato growers in using the vaccine, as measured through a post-presentation survey.

- Provide a BENCHMARK - For each performance measure provided, include benchmark. The benchmark is the baseline data against which you will measure your success. Examples of a benchmark could include current or initial level of knowledge, current behavior, or current conditions.

BENCHMARK:

Currently, a vaccine does not exist.

- Provide a TARGET- For each benchmark provided, indicate the TARGET. The TARGET is the level of change that you anticipate by the completion of the project. This is NOT the target audience or target population.

TARGET:

At least 30 percent of the attendees at the presentations will indicate an interest in using the vaccine.

- Describe your PERFORMANCE MONITORING PLAN. How will you monitor your progress toward achieving each GOAL? What are your data sources for monitoring performance? For example, will you conduct surveys or use questionnaires? How will you collect the required data? Be sure to include the frequency of your data collection. Describe how you will share the results of the project with specialty crop growers and other interested specialty crop stakeholders.

To monitor the success of the project, we will meet together regularly as a research team to discuss our progress towards the development of a vaccine. Once the vaccine has been developed or is under way, we will work together to develop presentations to be shared with the growers. After we've shared the results, we will measure the success of the presentations through surveys.

Work Plan

Project Activity - Describe the project activities that are necessary to accomplish the objectives. Make sure you include your performance monitoring/data collection activities.	**Who will do the work?** Indicate the project participants who will do the work of each activity, including subrecipients, and/or contractors. If you request grant funds for personnel and contractors, you must include them in the work plan to demonstrate the requested funding is warranted. If you request funds for travel, these activities must also be included.	**When will the activity be accomplished?** Include a timeline that indicates when each activity will occur (at least month and year) and beginning and end dates for the project. Make sure the work plan timeline shows that the project will be completed within the allowable grant period.
Determine if RNAi is involved in the natural resistance	Senior Research Specialist and Students	Sept. 2014 – Jan. 2015 (Begin)

Construct an infectious cDNA clone for PepMV	Senior Research Specialist and Students	Jan. 2015 – Jun. 2015
Construct an RNA immunization vector	Senior Research Specialist and Students	Jun. 2015 – Aug. 2015
Develop an attenuated PepMV strain	Senior Research Specialist and Students	Aug. 2015 – May 2016
Test the efficacy of the immunization vector	Senior Research Specialist and Students	March 2016 – Dec. 2016
Results presentation at APS	Project Investigator	Jan. 7-10, 2017
Results presentation and dissemination at AC field day	Project Investigator	May – Sep. 2017 (End)

Project Commitment – Describe the specialty crop stakeholders other than the applicant, individuals and organizations involved in the project who support this project and why.

The Tomato Association and its 500 members support this project. The members have recently identified PepMV as the greatest threat to their crops and specifically approached the researchers to request their assistance in finding solutions to it.

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 section 4.6 Funding Restrictions prior to developing their budget narrative.

Budget Summary	
Expense Category	Funds Requested
Personnel	$27,000
Fringe Benefits	$9,585
Travel	$1,608
Equipment	$5,000
Supplies	$14,830

Contractual	$0
Other	$5,500
Direct Costs Subtotal	$63,523
Indirect Costs	$0

Total Budget	$63,523

- **Personnel** – List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that solely enhance the competitiveness of specialty crops. See the Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Salaries and Wages, and Presenting Direct and Indirect Costs Consistently under section 4.6.1 for further guidance.

Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
Senior Research Specialist	10 % FTE	$21,000
Undergraduate Students	500 hours	$6,000

Personnel Subtotal	$27,000

- **Fringe Benefits** - Provide the fringe benefit rates for each of the project's salaried employees described in the Personnel section that will be paid with SCBGP funds.

Name/Title	Fringe Benefit Rate	Funds Requested
Senior Research Specialist	44.74 %	$9,387
Undergraduate Students	3.3 %	$198

Fringe Subtotal	$9,585

- **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 and subsistence rates prescribed in those regulations. This information is available at http://www.gsa.gov. See the Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Travel, and Foreign Travel for further guidance.

Trip Destination	Purpose of the Trip	Type of Expense (airfare, car rental, hotel, meals, mileage, etc.)	Unit of Measure (days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming the Expense	Funds Requested
City X and City Y	Field surveys in City Y (4 day trips), Field surveys in City X (2 overnight trips), and the Annual Agricultural Center Field Day (1 day trip)	Car rental	Days	7	$32/day	1	$224
	Field surveys in City Y (4 day trips), Field surveys in City X (2 overnight trips), and the Annual Agricultural Center Field Day (1 day trip)	M&IE	Days	7	$25/day	1	$175
	Field Surveys in City X	Lodging	Nights	2	$60/night	1	$120
Nashville, TN	Annual American Phytopathological	Airfare	Flight	1	$349	1	$349

	Society						
		Lodging	Nights	5	$99	1	$495
		M&IE	Days	5	$49	1	$245

Travel Subtotal	$1,608

- Additional justification of travel expenses, as needed:

- **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. See the Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Equipment - Special Purpose for further guidance.

  Rental of "general purpose equipment’’ must also be described in this section. Purchase of general purpose equipment is not allowable under this grant. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Equipment - General Purpose for definition, and Rental or Lease Costs of Buildings, Vehicles, Land and Equipment.

Item Description	Justification for Equipment	Rental or Purchase	Funds Requested
96-well thermocycler	to accommodate the large numbers of PCR-related experiments outlined in the project	Purchase	$5,000

Equipment Subtotal	$5,000

- **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 solely enhance the competitiveness of specialty crops. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Supplies and Materials, Including Costs of Computing Devices for further information.

Item Description	Justification for Supplies	Per-Unit Cost	Number of Units/Pieces Purchased	Funds Requested

greenhouse supplies for growing tomato plants including 400 pots, soils (10-50 lb bags), and fertilizers (Osmocote, 5 lb)				$500
Laboratory supplies including chemicals, biochemicals, molecular biology reagents, enzymes, columns for RNA and DNA isolations, plant and bacterial media, plastic- and glass-ware, gel boxes and trays	Expendable supplies are required on a monthly basis to run the proposed tests. Because they are not reusable, they have to be replenished on a monthly basis.	$1,000/month	12 months	$12,000
two sets of Gilson Pipetteman (each set consisting of 4 pipettes ranging from I µl to 100o µl, $1,165.00 for each set)		$1,165/set	2	$2,330

Supplies Subtotal	$14,830

- **<u>Contractual/Consultant</u>** – 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. (Repeat this section for each contract/consultant.)
    - If the contractor/consultant has already been selected, please verify that the State applicant followed the same policies and procedures it uses for procurements from its non-federal sources. For all non-State applicants, please verify that the applicant used its own procurement procedures which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 7 CFR Part 3019.40 through 48 or 3016.36, as applicable.

NA

    - If a contractor/consultant has not yet been selected, provide an acknowledgement that the procurement processes have not yet been conducted and an assurance that the State applicant will

follow the same policies and procedures it uses for procurements from its non-federal sources. For all non-State applicants, provide an acknowledgement that the procurement processes have not yet been conducted, and an assurance that the applicant will use its own procurement procedures which reflect applicable State and local laws and regulations and conform to the Federal law and standards identified in 7 CFR Part 3019.40 through 48 or 3016.36, as applicable.

NA

- Provide an itemized budget (personnel, fringe, travel, equipment, supplies, other, etc.) with appropriate justification. If indirect costs are/will be included in the contract, include the indirect cost rate used. Please note that any statutory limitations on indirect costs also apply to contractors and consultants.

NA

- If contractor employee and consultant hourly rates of pay exceed the salary of a GS-15 step 10 Federal employee in your area (for more information please go to http://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2014/general-schedule/), provide a justification for the expenses. This limit does not include fringe benefits, travel, indirect costs, or other expenses. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Contractual and Consultant Costs for acceptable justifications.

NA

Contractual/Consultant Subtotal	$0

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

  If you budget meal costs for reasons other than meals associated with travel per diem, provide an adequate justification to support that these costs are not entertainment costs. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Meals for further guidance.

Item Description	Justification of the Expense	Per-Unit Cost	Number of Units	Funds Requested
Publishing costs	Partially defray costs of publishing the results	$1,500	1	$1,500
Rental of transgenic greenhouse		$140/month	28.5 months	$4,000

Other Subtotal	$5,500

- **Indirect Costs** – The indirect cost rate must not exceed the rate established by the State department of agriculture and cannot exceed 8 percent of any project's budget. Indirect costs are any costs that are incurred for common or joint objectives that therefore, 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 Request for Applications section 4.6.1 Limit on Administrative Costs and Presenting Direct and Indirect Costs Consistently for further guidance.

Indirect Cost Rate	Funds Requested
	$0

Indirect Subtotal	$0

- **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.

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

Program Income Total	$0

Project Title (*15 words or less)*

Farm-to-School: Building New Markets for Specialty Crops in Schools

Abstract - Include a project summary of 250 words or less suitable for dissemination to the public. It should include the need for the project, a brief description of the goals and outcomes, and your plan for evaluating and measuring the success of the project or program.

Develop an online toolkit and conduct farm-to-school workshops for foodservice buyers and staff on how to purchase and prepare local fruits and vegetables; provide classroom resources to educate students about the benefits of eating fruits and vegetables; conduct grower trainings to assist specialty crop producers in selling to institutional markets; develop resources and hold events to help farmers to understand and prepare for Good Agricultural Practices (GAPs) food safety certification as required by many schools and foodservice companies; and survey farmers and processor to inventory the current capacity for post-harvest processing required to meet the school foodservice market.

Project Partner Organization - Include the name of the applicant organization that will establish an agreement or contractual relationship with the State department of agriculture to lead and execute the project.

State Department of Agriculture Farm to School Program

Project Purpose

- What is the specific issue, problem or need that the project will address?

School buyers often require processed products, due to labor or facilities constraints, yet farmers may have limited knowledge of or access to necessary processing facilities. Farmers could expand their markets by producing value-added, consumer ready products but do not have the processing equipment, skills or resources to manufacture their own products and need processors who can help develop and manufacture these products. However, farmers need guidance as to the opportunities and requirements for selling to schools. In addition to processing and food safety requirements, few farmers are aware of the purchasing procedures of schools.

Schools also need training on purchasing from farms or smaller distributors and on building menus that cost-effectively use seasonal produce. Local schools also increasingly require Good Agricultural Practices/Good Handling Practices (GAP/GHP) certification from farm vendors as assurance that the crops were grown in accordance with recognized standards to minimize health risks. Consequently, local small/medium sized farmers need to continue GAP/GHP audit training in order to compete with larger corporate farms.

- Why is the project important and timely?

Currently, there are not any funded or implemented projects that benefit this situation.

- What are the objectives of the project?

Develop an online toolkit and conduct farm-to-school workshops for foodservice buyers and staff on how to purchase and prepare local fruits and vegetables; provide classroom resources to educate students about the benefits of eating fruits and vegetables; conduct grower trainings to assist specialty crop producers in selling to institutional markets; develop resources and hold events to help farmers to understand and prepare for Good Agricultural Practices (GAPs) food safety certification as required by many schools and foodservice companies; and survey farmers and processor to inventory the current capacity for post-harvest processing required to meet the school foodservice market.

- If any of the project activities or costs has the potential to enhance the competitiveness of non-specialty crops (ex: farmers market, general buy local, CSA etc.) describe the methods or processes you will implement to verify all grant funds are expended on activities and costs that only enhance the competitiveness of eligible specialty crops. If you propose a cost-share or match to cover non-specialty crop activities and costs, include the specific costs or contributions proposed to meet the cost-share or match, the source of funding or contributions, and describe how you determined the appropriate amount of cost-share or match. See the Request for Applications section 3.8 Cost Sharing and Matching for guidance on documentation standards.

It is also important to note, that although meats, grains, and other non-specialty crop commodities will be included in this project, the project staff will utilize other funding sources to provide matching funds. The project staff will document all funds to ensure that Specialty Crop Block Grant Program funds are only utilized to enhance the competitiveness of specialty crop commodities

- If the project is a continuation of a project that the Specialty Crop Block Grant Program (SCBGP) funded previously, describe how the project differs from and builds on the previous project's efforts. Describe also the likelihood of the project becoming self-sustaining and not indefinitely dependent on grant funds. Specifically, provide a summary (3 to 5 sentences per project) of the accomplishments of the previous project that have led you to seek continued funding.

NA

- Have you submitted the project to another Federal or State grant program other than the SCBGP for funding and/or is another Federal or State grant program other than the SCBGP funding the project currently?

    - If no, indicate that you have not.

I have not submitted this project to any other Federal or State grant program.

    - If yes, identify the Federal and/or State grant program by name and describe how the new project differs from and supplements efforts of the SCBGP and the other Federal or State grant program rather than duplicates funding efforts. The SCBGP will not fund duplicative projects.

Potential Impact - This section must show how the project benefits the specialty crop industry and/or the public or multiple states rather than only a particular commercial product, single organization, institution, or individual.

- Who are the specialty crop beneficiaries of the project?

The State is a major producer of fruit and vegetables and the State's specialty crop producers will be broadly impacted by the implementation of this project. Food processors, distributors, and others involved with providing specialty crop foods will also benefit.

- How many specialty crop beneficiaries will the project benefit?

There are approximately 10,0000 small (less than $250,000 in sales) and medium sized ($250,000 to $1 million) fruit and vegetable growers who will benefit from this project.

- How will the project benefit the specialty crop beneficiaries?

It is anticipated that the state's fruit and vegetable producers will benefit from increased sales.

- What is the potential economic impact of the project if it can be estimated?

Schools on the other hand represent new market opportunities for these farmers where they may be able to sell their crops directly and receive full value. The State's schools participating in the National School Lunch Program served approximately 85 million lunches in the 2007 academic year and an additional 26 million breakfasts. They spent over $350 million dollars on school food, associated costs, and labor. An additional $1.6 million was spent in 2009 on fresh fruit and vegetables as part of the USDA Fresh Fruit and Vegetable Program and the State Grown Fruit and Vegetable Program.

- If applicable, how will the project have a multi-state (benefitting two more or states) or national impact?

NA

Expected Measurable Outcomes - Provide at least one distinct, quantifiable, measurable project outcome that solely supports enhancing the competitiveness of eligible specialty crops. If the outcome measures are long-term and occur after the project's completion, then identify an intermediate outcome that occurs before the end of the grant period and that is expected to help lead to the fulfillment of long-term outcomes. For further information on expected measurable outcomes, please see the Outcomes Model or this Educational Bulletin.

- Provide a GOAL - A goal is what you hope to achieve as a result of conducting the activities and producing the outputs (tangible results that can be seen, touched, handled, or moved about) of the project. Examples of outcome-oriented goals could include a change in knowledge, change in behavior, change in conditions that make a difference for the beneficiaries of the project.

GOAL:

Expand the market for State-grown specialty crops in schools.

- Provide a PERFORMANCE MEASURE. Identify a performance measure for each goal that you will use to measure the actual project results compared to the expected results. These are usually expressed in quantifiable terms and should be objective and measurable (numeric values, percentages, scores and indices, although in certain circumstances qualitative measures are appropriate).

PERFORMANCE MEASURE:

Performance Measures will be based on biennial surveys of State school districts, the number of schools districts reporting that they are purchasing from local farms or buying Local-Farm grown specialty crops through distributors.

- Provide a BENCHMARK - For each performance measure provided, include benchmark. The benchmark is the baseline data against which you will measure your success. Examples of a benchmark could include current or initial level of knowledge, current behavior, or current conditions.

BENCHMARK:

Benchmark data comes from a survey conducted in 2013, which requested information from all 295 school nutrition directors in the State. The survey indicated that twenty-nine districts directly purchased from local producers in the past year (2012).

- Provide a TARGET- For each benchmark provided, indicate the TARGET. The TARGET is the level of change that you anticipate by the completion of the project. This is NOT the target audience or target population.

TARGET:

10% of school districts (30 districts) will be purchasing State-grown fruit and vegetables by September 2017.

GOAL:

Increase the number of specialty crop growers with the certification required by many school districts.

- Provide a PERFORMANCE MEASURE. Identify a performance measure for each goal that you will use to measure the actual project results compared to the expected results. These are usually expressed in quantifiable terms and should be objective and measurable (numeric values, percentages, scores and indices, although in certain circumstances qualitative measures are appropriate).

PERFORMANCE MEASURE:

The number of farmers participating in the workshops, number of downloads of GAP/GHP training materials from DA website, and the number of farmers certified by DA's Fruit and Vegetable Inspection Program who report having attended these workshops.

- Provide a BENCHMARK - For each performance measure provided, include benchmark. The benchmark is the baseline data against which you will measure your success. Examples of a benchmark could include current or initial level of knowledge, current behavior, or current conditions.

BENCHMARK:

The State currently has 143 specialty crop farms that have passed the GAP audit.

- Provide a TARGET- For each benchmark provided, indicate the TARGET. The TARGET is the level of change that you anticipate by the completion of the project. This is NOT the target audience or target population.

TARGET:

The target number is fifty new farms with a GAP/GHP certification by September 2017.

- Provide your PERFORMANCE MONITORING PLAN. How will you monitor your progress toward achieving each GOAL? What are your data sources for monitoring performance? For example, will you conduct surveys or use questionnaires? How will you collect the required data? Be sure to include the frequency of your data collection. Describe how you will share the results of the project with specialty crop growers and other interested specialty crop stakeholders.

Performance will be monitored through the biennial surveys described above and through quarterly review of the number of GAP certifications that correlate with workshop attendance. Results of this project will be shared with other Farm to School programs through the national Farm to School Network.

Work Plan

Project Activity - Describe the project activities that are necessary to accomplish the objectives. Make sure you include your performance monitoring/data collection activities.	**Who will do the work?** Indicate the project participants who will do the work of each activity, including subrecipients, and/or contractors. If you request grant funds for personnel and contractors, you must include them in the work plan to demonstrate the requested funding is warranted. If you request funds for travel, these activities must also be included.	**When will the activity be accomplished?** Include a timeline that indicates when each activity will occur (at least month and year) and beginning and end dates for the project. Make sure the work plan timeline shows that the project will be completed within the allowable grant period.
Hire 1 FTE to coordinate grant activities	Jane Doe (JD)/Robert Smith (RS)	Sep 2014 (BEGIN)
Planning period for GAP/GHP outreach activities, assess benchmark data on GAP/GHP certification	JD/Coord	Oct-Dec 2014

Planning period for farmer and foodservice trainings	JD/Coord	Jan-May 2015
Website set-up for foodservice toolkit	JD/Coord/Univ/DA IT	May-Aug 2015
GAP/GHP on-farm event and video shooting, editing and production (inspectors present for on-farm event and video shoot and provide expertise for production) 	JD/SFDM/Coord	Jul-Dec 2015
Survey school nutrition directors to determine numbers and levels of spending on specialty crops grown in State 	JD/Coord	Oct-Dec 2014
Farmer Training Events (incl. GAP training) – 3 events	JD/Coord	Jan-Mar 2016
Foodservice Training events – 3 events	JD/Coord	May-Jun 2016
GAP/GHP On-Farm Event	JD/SFDM/Coord	Apr-Jul 2016
Processing/Distribution Survey to farms and processors (Development based on info to be provided by CHC and DA Farm-to-School staff)	JD/Coord	Sep-Nov 2015
Processing Study Analysis, Report and plan next steps for Processing and Distribution Project – outreach, farmer-processor-buyer summits, etc.	JD/Coord/SFDM/RS	Dec 2015 – Apr 2016
Farmer Training events (incl. GAP training) – 3 events	JD/Coord	Jan-Mar 2017
Foodservice Training events – 3 events	JD/Coord	May-Jun 2017

Gather and assess data on GAP/GHP certification during grant period	JD/Coord	Jun-Jul 2017
Final Reporting on Grant Activities	JD/Coord/RS	Jul-Sep 2017 (END)
Survey School nutrition directors to determine numbers and levels of spending on specialty crops grown in State (Follows grant period, but allow us to gauge change and interest for next steps	JD	Oct-Dec 2017

Project Commitment – Describe the specialty crop stakeholders other than the applicant, individuals and organizations involved in the project who support this project and why.

This project is building on work done in collaboration with a number of partners over the past couple of years. Many of those partners will work with DA on the proposed projects, as detailed below. The SU County Extension service will loan video and editing equipment; SU Small Farms Team will conduct outreach about GAP's; the Institute for Sustainable Agriculture and University Extension will structure for foodservice toolkit website and page structure and coding.

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 section 4.6 Funding Restrictions prior to developing their budget narrative.

Budget Summary	
Expense Category	Funds Requested
Personnel	$124,000
Fringe Benefits	$31,000
Travel	$8,000
Equipment	$0

Supplies	$3,000
Contractual	$23,000
Other	$61,000
Direct Costs Subtotal	$250,000
Indirect Costs	$0

Total Budget	$250,000

- **Personnel** – List the organization's employees whose time and effort can be specifically identified and easily and accurately traced to project activities that solely enhance the competitiveness of specialty crops. See the Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Salaries and Wages, and Presenting Direct and Indirect Costs Consistently under section 4.6.1 for further guidance.

Name/Title	Level of Effort (# of hours OR % FTE)	Funds Requested
Coordinator	100 % FTE	$124,000

Personnel Subtotal	$124,000

- **Fringe Benefits** - Provide the fringe benefit rates for each of the project's salaried employees described in the Personnel section that will be paid with SCBGP funds.

Name/Title	Fringe Benefit Rate	Funds Requested
Coordinator	25 %	$31,000

Fringe Subtotal	$31,000

- **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 and subsistence rates prescribed in those regulations. This information is available at http://www.gsa.gov. See the Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Travel, and Foreign Travel for further guidance.

Trip Destination	Purpose of the Trip	Type of Expense (airfare, car rental, hotel, meals, mileage, etc.)	Unit of Measure (days, nights, miles)	Number of Units	Cost per Unit	Number of Travelers Claiming the Expense	Funds Requested
Six food service training and six farmer training events	Provide training to food service personnel and farmers	Mileage	Miles	300 miles x 12 trips	$.55	1	$1,980
		Lodging	Nights	12	$70	2	$1,680
		M&IE	Days	12	$39	2	$936
City X	Host 3 planning meetings with project partners	Mileage	Miles	400 miles x 3 trips	$.55	1	$600
City Y	Host 3 Small Farms Advisory Board meetings for project	Mileage	Miles	295 miles x 3 trips	$.55	1	$487
		Lodging	Nights	2	$91	1	$182
		Meals	Days	3	$59	1	$177
		Parking	Days	3	$20	1	$60
City Y	Host 3 Small Farms Team meetings	Mileage	Miles	295 miles x 3 trips	$.55	1	$487
		Lodging	Nights	2	$91	1	$182
		Meals	Days	3	$59	1	$177

		Parking	Days	3	$20	1	$60
City Z	Host GAP/GHP on-farm events	Mileage	Miles	40 miles x 1 trip	$.55	1	$70
		Lodging	Nights	2	$94	1	$188
		Meals	Days	2	$59	1	$118
		Parking	Days	2	$10	1	$20
City A	Host GAP/GHP on-farm events	Mileage	Miles	208 miles x 1 trip	$.55	1	$378
		Lodging	Nights	2	$70	1	$140
		Meals	Days	2	$39	1	$78

Travel Subtotal	$8,000

Additional justification of travel expenses, as needed:

- **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 solely enhance the competitiveness of specialty crops. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Supplies and Materials, Including Costs of Computing Devices for further information.

Item Description	Justification for Supplies	Per-Unit Cost	Number of Units/Pieces Purchased	Funds Requested
Office supplies & materials	Support content for online toolkit	$500 per year	3 years	$1,500
Paper, folders, etc.	Educational materials to distribute	$500 per year	3 years	$1,500

Supplies Subtotal	$3,000

- **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. (Repeat this section for each contract/consultant.)
    - If the contractor/consultant has already been selected, please verify that the State applicant followed the same policies and procedures it uses for procurements from its non-federal sources. For all non-State applicants, please verify that the applicant used its own procurement procedures which reflect applicable State and local laws and regulations and conform to the Federal laws and standards identified in 7 CFR Part 3019.40 through 48 or 3016.36, as applicable.

Online Toolkit Development and Adaptation: this $10,000 contract was awarded prior to the submission of this project following the State Department of Agriculture's procurement policies. It will take the online toolkit donated by University State X, and adapt it for DA use and web specifications. Personnel under this contract will be paid at a rate of $60/hour. Any leftover funds will be used to develop State-specific content for the toolkit.

- If a contractor/consultant has not yet been selected, provide an acknowledgement that the procurement processes have not yet been conducted and an assurance that the State applicant will follow the same policies and procedures it uses for procurements from its non-federal sources. For all non-State applicants, provide an acknowledgement that the procurement processes have not yet been conducted, and an assurance that the applicant will use its own procurement procedures which reflect applicable State and local laws and regulations and conform to the Federal law and standards identified in 7 CFR Part 3019.40 through 48 or 3016.36, as applicable.

Stipends for GAP/GHP Video Shoot/Edit: flat fee stipends for 5 youth at $2,000 each to be coordinated through County Extension Hmong Youth Film Project for a total of $10,000. The participating youth have not been chosen for these stipends yet; however, they will be chosen through the State's procurement standards. Youth will film and edit video in close collaboration with DA staff and under supervision of SU Hmong Outreach Coordinator.

Processing Study Analysis: this $3,000 flat rate contract will analyze the production information on processing needs of growers and current availability of processing facilities and compile a report. The project staff will use the procurement standards established by the State to select this contractor.

Contractual/Consultant Subtotal	$23,000

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

If you budget meal costs for reasons other than meals associated with travel per diem, provide an adequate justification to support that these costs are not entertainment costs. See Request for Applications section 4.6.2 Allowable and Unallowable Costs and Activities, Meals for further guidance.

Item Description	Justification of the Expense	Per-Unit Cost	Number of Units	Funds Requested
Foodservice Trainings	Space rental, educational materials, trainer stipends, food for demonstrations and hands-on workshop	$3,500	6	$21,000
Farmer Trainings	Space rental, educational materials, trainer stipends and other costs	$2,000	6	$12,000
Processor Survey	Sampling, survey printing and mailing to farmers and processors around the State, using services of National Agricultural Statistics Service, information from the Processors Association and other sources	$3,333 per year	3 years	$10,000
GAP/GHP On-Farm Trainings	Administration costs, paperwork, surveys and stipends to host farms	$1,333 per year	3 years	$4,000
Copies of GAP/GHP video onto DVD	Getting DVDs made and packaged	$5	400	$2,000
SU Small Farms Team and Small Farms Advisory Board Meetings	Meet in person with team and board members from around the state to plan, develop, and implement training and outreach to small farms and minority and socially disadvantaged farmers. These farms are those most likely to need GAP/GHP certification to sell to schools.	$4,000 per year	3 years	$12,000

Other Subtotal	$61,000

Measuring Irrigation Water Quality on Fruit and Vegetable Farms

Applicant:

ABC Private University

Abstract:

Partner with State B, C, D, E, F, and G to objectively measure the quality of irrigation water used on fruit and vegetable farms in several states to help shape future irrigation water standards, improve on-farm risk assessment, provide strategies for implementing a water testing program, aid in interpreting water testing results, and provide assistance for understanding when mitigation strategies should be adopted.

Project Purpose:

This project is focused on the collection of scientific data on irrigation water quality in the seven states to contribute to the National Irrigation Database organized by the National GAPs Program at Cornell University for fresh fruit and vegetable production in the National Food Safety Program. Consequently, this activity may help shape future national irrigation water standards. Moreover, educational workshops on irrigation water quality management will be provided to Extension professionals and producers. This effort will improve on-farm risk assessment, provide strategies for implementing a water testing program, aid in interpreting water testing results and provide assistance for understanding when mitigation strategies should be adopted.

Fruit and vegetable crops tend to be irrigated with surface water sources, such as ponds and streams. While there is concern with all sources of water for pre-harvest use, surface water has a higher probability of being exposed to more fecal contamination than ground water. This is expected to pose greater human health risk than irrigation water from deep aquifers with properly constructed and protected wells. In most cases, the sanitary quality of surface water used for irrigation is not known because it is not regularly tested.

This project has not been submitted to or funded by another Federal or State grant program.

Potential Impact:

Contamination of fresh fruits and vegetables with pathogens can occur anywhere in the supply chain, and once it occurs, it is difficult, if not impossible, to remove. The FDA Produce Safety Action Plan states that the most likely points of contamination of high risk commodities by key pathogens occur during pre-harvest production. Among these points, one of the most likely potential mechanisms of *E. coli* O157:H7 and *Salmonella* contamination is water (irrigation or flooding/runoff from adjacent land).

The fruit and vegetable industry accounts for nearly $75,000,000 in annual sales and is comprised of over 5,000 farms over the seven involved states. This project will impact the local and regional fruit and vegetable industry by providing an objective assessment of the quality of water currently used for irrigation, evaluating the ability of currently-used criteria to discern contamination by key

pathogens and providing information to Extension professionals and producers to improve on-farm irrigation water management. Furthermore, by maintaining buyer and consumer confidence in and demand for fruit and vegetable production in the State will potentially enhance farm viability and profits.

The project proposed here is intended to help fill the nationwide irrigation water quality knowledge gap by compiling and analyzing water samples for generic *Escherichia coli* (*E. coli*) densities, pH, specific density and turbidity that will be incorporated into the National Irrigation Database. Collaborators in six other states are participating in this nationwide effort. The states involved agreed to pursue funds to complete water quality work and enter data for the National Food Safety Program.

Furthermore, the results of this study will be shared with the Department of Agriculture in each participating State, as well as with 350 growers through State-run grower-level meetings.

Expected Measurable Outcomes:

The **GOAL** of this project is to participate in the development of a National Irrigation Database. The database will provide new scientific data to support comprehensive efforts by the produce industry and public health regulators to create meaningful and realistic water quality standards that minimizes microbial food safety hazards to fresh and fresh-cut vegetables posed by surface irrigation. It is anticipated that at least 50 public health regulators and produce industry representatives will access the database to support their efforts to create new water quality standards (**TARGET**). There has not previously been an effort to measure current irrigation water quality (**BENCHMARK**). Irrigation water samples will be taken four times during the production season. Results will be compiled and analyzed by crop, region, source and time of sampling. These results will be added to the National Irrigation Database and all who access the Database will be required to complete a short survey indicating who they are and what they intend to use the data for (**PERFORMANCE MEASURE**).

Work Plan:

Baseline water quality data will be collected four times during the production season on water samples on 10 farms in each of 3 geographically diverse regions of the State, with varied irrigation sources (rivers, ponds, lakes, streams, wells, springs, etc.). A total of thirty farms will be chosen for each year of the project, providing data from 60 farms over the 2 year life of the project. This data will be added to the National Irrigation Database developed by the National GAPs Program at Cornell University.

Quality analyses will include quantified generic *E. coli,* specific conductance, turbidity and pH and will be performed by certified private laboratories capable of these analyses. Since one of the objectives of this project is to educate growers and farm managers about the importance of on-farm irrigation water management practices for microbiological criteria, this is a perfect opportunity to conduct one-on-one training for water sampling with individual growers. Repeated site visits will provide training reinforcement and quality control. A minimal component site survey and adjacent

land-use analysis for potential water quality impacts will be conducted at each sampling site. The site evaluation template will be adopted from the USDA GAP audit checklist.

September 2014 to September 2016

2014

(September - December)
- Develop workshop materials and factsheets for water sampling, testing and mitigation strategies to reduce microbial load – Project Director

2015

(April – September)
- Collect irrigation water samples from 10 farms in each of 3 geographic regions, four times over the production season (10 farms x 3 regions x 4 sampling times= 120 samples) – Student Assistant and Project Director

(August – November)
- Develop workshop materials and factsheets for water sampling, testing and mitigation strategies to reduce microbial load – Student Assistant

2016

(April – September)
- Collect irrigation water samples from 10 farms in each of 3 geographic regions, four times over the production season (10 farms x 3 regions x 4 sampling times= 120 samples) – Student Assistant

(August – November)
- Provide workshops on irrigation water quality and management for Extension professionals and growers in 3 regions – Project Director and Student Assistant

Project Commitment:

Project partners are committed to the implementation of all aspects of this water quality project. In fact, there has been a Memorandum of Understanding signed between all States involved in this project to ensure the quality of the cooperation between these entities. Growers associations representing carrots, potatoes, tomatoes and berries also support this project. The ABC Private University will lead implementation of the overall multi-state endeavor. Specifically, it will be responsible for the research, information, and outreach.

Budget Narrative ($54,576.00):

Budget Item	Year 1	Year 2	TOTAL
Personnel*			**$ 9,480.00**
Student Assistant	$ 4,680.00	$ 4,800.00	

Fringe Benefits*			**$ 3,792.00**
Benefits (40%)	$ 1,872.00	$ 1,920.00	
Supplies*			**$ 1,750.00**
Supplies	$ 1,750.00	$ 0.00	
Travel*			**$ 9,000.00**
Travel	$ 3,750.00	$ 5,250.00	
Contractual*			**$ 22,960.00**
XYZ Laboratories (water testing)	$ 11,750.72	$ 11,750.72	
Other Costs*			**$ 3,050.00**
Shipping Costs	$ 550.00	$ 0.00	
Publication Costs	$ 0.00	$ 1,000.00	
Workshops, Materials, and Media	$ 0.00	$ 1,500.00	
Funds Requested	$ 24,352.72	$ 26,220.72	**$ 50,032.00**
Indirect costs	$ 2,001.28	$ 2,001.28	**$ 4,002.56**
TOTAL FUNDS REQUESTED	**$ 26,354.00**	**$ 28,222.00**	**$ 54,576.00**

Personnel Narrative

We plan to hire one student to assist with this project through data entry and training preparation. In Year 1, this individual will work a total of approximately 4 hours per day at $13.00 per hour for 2 days per week for 45 weeks (**$4,680.00**). In 2016, the student assistant will maintain the same wages; however, he or she will also receive a stipend of $120 to attend and present at one of the grower workshops for a total of **$4,800.00**.

Fringe Benefits Narrative

The fringe benefit rate for the student assistant is 40 percent; therefore, in Year 1, the project will pay **$1,872.00** for the student assistant and **$1,920.00** for 2014.

Supplies

Dr. Joe Smith and his research assistant will need research supplies such as sample tubes, boxes and trays for transportation, and water samplers. These items will total **$1,750.00**.

Travel Narrative

ABC Private University's established automobile mileage rate is $0.40/mile. To complete the objectives of this project, the project staff will need to travel an average of 170 miles in the eastern region of the State, 360 miles in the central region of the State, and 620 miles in the western region of the State. This is a total of 1,150 miles for one trip or $460 (1,150 miles x $0.40). There will be a minimum of 4 trips per year for a total of **$1,840** along with an additional average 200 miles per region to collect samples from each farm for a total of **$960** (4 trips x 3 regions x 200 miles x $0.40). There will be 4 trips to the central and western regions that requires 2 nights at hotels. These charges will total **$560** ($70/night x 8 nights). ABC Private University's Per Diem rate for meals ($39/day), while traveling for 10 days, will total to **$390** ($39/day x 10 days). Each of the items included in the Travel, Training, and Workshop section totals to the amount of (**$3,750.00**) for the Year 1 budget.

The sampling travel costs will be the same for the Year 2 budget; however, additional costs for travel to two workshops in each region (one for Extension agents and one for growers) will be required. The eastern region will not require travel costs; therefore, the total amount needed for travel to 2 regions for 2 workshops is $375 per event for a total of **$1,500.00**. Consequently, the 2014 budget is **$5,250.00** ($3,750 + $1,500).

***Contractual Narrative**

We will contract with XYZ Laboratories in order to perform the water analysis of all the samples gathered by the project investigators. We will establish this contract using university procurement policies that reflect applicable State and local laws and regulations and conform to the Federal law and standards identified in 7 CFR Part 3019.40 through 48 to ensure that it is fairly awarded. This quality analysis will be performed for a flat rate of **$11,750.72** per year of the project for a total of **$23,501.44** ($11,750.72 x 2).

Each lab that enters data will need a secure password and some training for data input. This will have an initial cost (approximately **$1,000.00**). Currently quality control procedures are performed for all data entered into the database with the lab data form. This too requires time, but is not necessary once the lab understands the data entry portal and how it works.

***Other Costs Narrative**

There are certain areas in the State that are considered to be inadequate for transferring water samples by vehicle. The cost associated with shipping these samples is **$550.00**.

In year 2, workshops will be offered for Extension professionals through train-the-trainer sessions and growers in each of the 3 regions of the state, covering proper irrigation water sampling, choosing the proper sanitary water tests, interpreting the test results and selecting mitigation strategies (**$1,500.00**). Training materials will be developed both for hard-copy and web dissemination. Presentations will also be developed for the workshops and available to the Extension professionals for use in their home counties (**$1,000.00**).

Enhancing Sustainable Specialty Crop Production

Applicant:

Farm Extension & Research Center

Abstract:

Support training and field activities for farmers in a twenty-two county area in the northwest part of the State, which includes sustainable soil and water management, insect, disease, and weed management, fruit and berry applied research, and business planning.

Purpose:

The retail and wholesale demand for local and sustainable vegetables, fruit, and greenhouse crops is currently growing at a rate of 10 to 20 percent per year. In addition, consumer demand is strong for direct-from-the-farm products through farm stands, pick your own operations, community supported agriculture programs, and internet based sales. Yet, resources for hands-on training of new and diversifying farmers are limited and must be increased to satisfy increased demand.

The Farm Extension & Research Center and its flagship plant are capable of utilizing grant funds to enhance its current program offerings of 1) an intensive 8-week specialty crop workshop series and 2) an ongoing workshop series for specialty crop farmers in a 22-county area in the northwest region of the State. This would be a new endeavor, which has not received any other Federal or State grant funds.

Since the Farm Extension & Research Center also support farmers who grow non-specialty crops and it's possible for them to benefit from some of the activities provided through this project, matching funds will be used to cover the cost of the inclusion of non-specialty crop producers in all activities in direct proportion to their participation. For example, if 360 of 400 participants in the workshop series are specialty crop producers, but 40 are not, then 10 percent of the funds to support the workshop series will come from non-SCBGP sources.

Potential Impact:

Programs at the Farm reach out to a diverse group of participants:

- Tobacco farmers who are interested in diversifying to specialty crops
- Row crop, dairy, and beef farmers interested in diversifying to specialty crops
- Young farmers who do not have access to land or sufficient capital but are interested in organic & sustainable specialty crop farming
- Other traditional farmers who want to diversify
- Persons who want to farm as a second career
- Persons who want to farm in retirement

Based on the business plans developed by the enterprises at the Farm, average gross revenue was estimated at $9,000 per acre. Given the early stage of the farm enterprises, it is likely that gross revenue will be greater than estimates in the first 3 to 5 years of operations. The program will conduct periodic surveys of all program participants and farm enterprises and request voluntary reporting of farm income related to the training program. In addition, gross revenue can be used to estimate infrastructure costs which are likely 2 to 3 times greater than gross revenue. The economic multiplier of infrastructure costs help to create economic activity for local farm supply businesses which helps keep farming communities to continue to thrive and allows farm

supply businesses to remain profitable.

There are two levels of service that the program provides. One level is for the workshop series and apprentice farmers. A second level of service is for participants that wish to participate in individual workshops, mentor farmer presentations and field walks, as well as other demonstration activities. It is estimated that over the three years of this project:

- At least 50 individuals will participate in the 8-week workshop series
- At least 75 individuals will participate in the independent workshops
- At least 5 enterprises will be created at the Farm Enterprise program
- At least 20 enterprises will be enhanced on participant-owned farms through participation in 8-week workshop series

Expected Measurable Outcomes:

Goal 1:	Increase knowledge of specialty crop issues of at least 400 individuals through an 8-week workshop series in 2015
Performance measure:	Registration records, weekly attendance records, and pre and post workshop self-assessment knowledge evaluations
Benchmark:	Determined by pre-training self-assessment tool (see attached)
Target:	Mean increase in specific knowledge areas of 40%
Goal 2:	Increase the ability of at least 90 specialty crop farmers to improve or enhance their farm-related enterprises by conducting 3 independent workshops in 2015 to be developed based on feedback from Goal 1
Performance measure:	Registration records, attendance records, and pre and post workshop evaluation (see attached)
Benchmark:	Determined by workshop evaluation
Target:	At least 50% of participants will use knowledge gained to improve or enhance their farm-related enterprise

Work Plan:

The Farm will use grant funds to support training and field activities that include sustainable soil and water management, insect, disease, and weed management, applied fruit and berry research, business planning, and development of enterprise budgets for new and diversifying farmers. The Farm will also contract with a part-time mentor farmer to reinforce the mentoring capacity of the program and allow for targeted expansion of trainings and workshops.

Support for apprentice farmers will include field preparation, fertilization with and incorporation of litter, field preparation for bedding, as well as bed shaping with drip tape, with/without plastic. Ongoing support will be provided to growers in market development, production issues, and farm infrastructure. In addition, apprentice farmers will be providing educational support through field walks and other demonstrations.

This project will run September 2014 - September 2015.

Activity	***Responsible Entity***	***Timeline***			
		Sep to Dec 2014	Jan to Mar 2015	Apr to Jun 2015	Jul to Sep 2015
Develop criteria and solicit applications for Mentor Farmer position	*Planning Committee*	X			
Contract with Mentor Farmer	*Planning Committee*		X		
Plan 8-wk training series	*Planning Committee*	X			
Conduct 8-wk training series	*Planning Committee*		X		
Evaluate training series	*Planning Committee*			X	
Plan workshops	*Planning Committee*	X			
Conduct workshops	*Planning Committee*		X	X	X
Evaluate workshops	*Planning Committee*				X
Annual Purchase of Supplies	*CED & Smith*		X		
Annual/Final Report	*CED & Smith*				X

Project Commitment:

The Farm Extension and Research Center is a successful collaboration between County Cooperative Extension and Economic Development, with support from State University's College of Agriculture and Life Science as well as the Center for Environmental Farming Systems. The Farm Planning Committee includes representation from the partner institutions and agencies and has a monthly meeting schedule to plan and implement programs at the Farm. Programs during the past 2 years demonstrate a strong commitment to developing the capacity at the Farm and promoting educational activities that support farm viability.

Budget Narrative (Total $22,800.00):

Supplies ($17,800.00)

These funds will purchase items under $5,000 that are needed for training programs on fruit, berry, and vegetable production at the Farm Extension & Research Center.

Item	Justification	Cost
Bedder	Planting Bed Preparation	$ 1,500
Cool Bot/Walk in Cooler	Post Harvest Cooling of Produce	$ 2,000
Cultivator	Tillage and Cover Crop Incorporation	$ 1,200
Hand Tools	Crop Production and Weed Management	$ 900
Hoop House	Season Extension	$ 4,400
Irrigation Supplies	Upgrade Pump and Drip Irrigation System	$ 1,100
Mulch Layer	Weed Management of Beds	$ 1,500
Mulches, Biodegradable and Plastic	Weed Management of Beds	$ 1,300
Rotary Mower	Weed and Cover Crop Management	$ 1,800
Tiller	Planting Bed Preparation	$ 2,100
		$ 17,800

Contractual ($5,000.00)

A mentor farmer will be hired as a contractor at a flat rate to provide regular and consistent guidance to workshop participants and apprentice farmers. These activities will take place during the 8 week workshop. This contractor has not been selected; however, we will select this contractor using the research center's written procurement policies.

Program Income ($4,750.00)

Registration Fee for 8 week workshop series - $2,500

Apprentice fee - $2,240

The income derived from this project will be reinvested into the program to support specialty crop farmers and help sustain and grow the project.

Establish a Super Berry Market in the State

Applicant:

Jane Smith

Abstract:

This project is designed to increase the production of organic Super Berries, aronia, saskatoons, raspberries, elderberries, currants and gooseberries in the State. This will be completed through the research and testing of value added products. The team will also design an organic berry producers' interactive website in order to share research results, methods, growing tips, and organic opportunities.

Purpose:

Nutritional antioxidant-rich foods are growing in demand from the consumer marketplace due to the health benefits and medicinal nature that super foods provide. Fruits containing high levels of anthocyanins and flavonoids with beneficial nutrients such as antioxidants, polyphenols, minerals and vitamins, are known as Super Berries. Research found that such berries contain compounds that fight degenerative diseases, heart conditions, and cancer. Research also indicated that consumer demand exceeds production levels producers can provide and that demand is expected to grow. Most super fruits in the market today are imported from other countries making them difficult to obtain.

For these reasons, it is becoming increasingly necessary to expand berry acreage that will produce Super Berries. It is important that we foster the development of this market for the State and the Region. Since this is a new endeavor, the submitted proposed project has not been presented to or funded by another Federal or State grant program.

Potential Impact:

There are growers presently in adjoining states producing limited amounts of aronia berries; however, the market is still in its infancy. To our knowledge, we are the only producers of the aronia, saskatoon and elderberries in this State. This grant will enable us to increase production efforts, which increase formal alliances with other area producers in order to obtain contracts with large juice and health/wellness processors.

Most berry plants take 2-4 years before their first measurable harvest; therefore, traditional farmers are reluctant to commit production farm ground to this type of specialty crop. It's our belief that as the market grows, the potential will be seen and farmers may be more willing to plant the healthy, alternative crop on their non-productive terrain as these berries thrive in timber woodlands, sand/gravel loams, etc. and can provide an additional income stream while taking up a minimal amount of acreage in order to be successful.

Each mature aronia bush produces up to 40 pounds of berries. We plan to increase production level to 2500 lbs of berries and help meet consumer demand. We also plan to increase the number of super berry producers in our state to four.

Expected Measurable Outcomes:

The **GOAL** of this project is to increase the number of growers and producers of Super Berries. Currently, there is only one known grower of Super Berries in the State (**BENCHMARK**). We will assist in the establishment and development of 3 to 4 additional Super Berry producers by fall 2016 (**TARGET**). This growth will be tracked through the creation of formal partnerships and berry establishments through the grant period (**PERFORMANCE MEASURE**).

Another **GOAL** of this project is the design and growth of an online web portal to increase the awareness of Super Berry potential and related health benefits. There is not any current **BENCHMARK** data for the website portal; however, we expect approximately 150 website hits each month and an increase in the number of Super Berry plant sales (**TARGET**). Project staff will track the monthly, website hits during the winter of 2016 through a tracking tool after the website is established in the fall 2014 (**PERFORMANCE MEASURE**).

Work Plan:

This project is planned to be executed in September of 2014, if funds are made available, and most activities will commence in late Fall 2014 with the exception of monitoring outcomes which will continue until Winter 2016.

1. Fall 2014 – Jane Smith and Ronald Smith will make efforts to gain/share knowledge, build relationships with area farmers, alternative crop producers and institutions interested in research and development.
2. Jane Smith and labor will prepare ground to be planted in spring of 2015 after ground thaw. This requires equipment rental, time/labor.
3. Jane Smith and labor will purchase plants and plant in two separate plantings; May and September.
4. Jane Smith and labor will cage and stake individual seedlings after each planting with possible mulching.
5. Jane Smith will research organic farming requirements and apply for organic certification.
6. Spring 2016 – Jane Smith and web design and maintenance contractor will design and maintain web portal to increase awareness, share opportunities and increase marketability and launch web portal in Fall 2016.
7. September 2016 – Annual Aronia Berry Meeting
8. September 2016 – Final reporting on the project.

Outreach activities will be performed on a continual basis. These activities will include on-farm demonstrations and tours for potential producers as well as trips to establish partnerships with other Super Berry producers.

Project Commitment:

The National SuperBerry Association has provided significant technical support in preparing this proposal and assisting Jane Smith in establishing a viable program to recruit new specialty crop producers to the production of Super Berries. The Association will continue to provide technical assistance throughout the project and will assist in the dissemination of research results to Super Berry producers and prospective Super Berry producers through its monthly e-newsletter.

Budget Narrative – (Total $13,390.50)

Travel ($1,725.50)

Travel is required to establish partnerships, research and observe growing methods and organic opportunities of Super Berry plantations. We will also attend the annual aronia berry meeting held in Sept. 2016 that includes

guest speakers from around the country on the super berry potential, health benefits, marketing and organic opportunities.

Purpose of Trip: 4 trips to the X Berry Farm in City A in State B as it is the largest super berry plantation in our region. These trips would be to pick up plants, examine how the berry farm is managed, organic fertilizer options and demonstrations of the equipment needed for a super berry plantation.

Number of people travelling: 2

Number of days travelling: 2

Estimated lodging and meals: lodging $200 and meals $100

Estimated mileage: 800 miles @ $.45/mile

Purpose of Trip: Tour other alternative sustainable farms in our region to educate ourselves on how other sustainable farmers manage their acreages. This will assist in developing partnerships with other growers.

Number of people traveling: 2

Number of days travelling: 1 day

Estimated Mileage: 400 miles @ $.45/mile

Estimated lodging: Meals: $80

Purpose of Trip: Attend 3-4 sustainable garden tours such as the Horticulture Exposition held in City A in State B in the spring of each year. Such tours also exist in City C in State B.

Number of days traveling: These tours are usually 2-3 day events where guest speakers come from across the country to speak on various gardening and sustainable farming subjects.

Estimated Mileage: 850 miles @ $.45/mile

Estimated lodging and meals: 3 nights lodging $300 and meals $125

Supplies ($8,040.00)

	Grant Resources	Applicant Resources
2000 Additional Super Berry Plants @ $2.00 average wholesale cost each	$ 2,000	$ 2,000
Organic fertilizer purchase	$ 1,000	$ 1,000
Temporary, reusable plant surrounds for wildlife protection (deer/rabbits) from young berry plants	$ 420	$ 420

24 rolls 24" x 150' galvanized mesh wire @ $35 per roll.		
Ground garden staples to hold caging material down 4 boxes (1000/pack) $59.99 each	$ 120	$ 120
Canning jars, pectin, sugar and items needed for recipe testing and researching marketable organic products (jams, juice blends, fruit chews, nutritional supplements)	$ 1,500	$ 1,500
Supply rental and labor to prepare ground necessary for planting, some tree removal and tillage.	$ 3,000	$ 3,000
TOTAL	**$ 8,040**	**$ 8,040**

Contractual ($3,000.00)

	Grant Resources	Applicant Resources
Website Design & maintenance: Online web portal for organic berry producers to network, share methods, growing tips, organic opportunities. This contractor has not been selected yet, but plan to follow the state procurement practices to select the contract. This contract will be a flat rate contract.	$ 3,000	$ 3,000
TOTAL	**$ 3,000**	**$ 3,000**

Other ($625.00)

	Grant Resources	Applicant Resources
2 year Domain name purchase ($70.00) + Internet/hosting fees for 2 years @ $49/month	$ 625	$ 625
	$ 625.00	**$ 625.00**

Training Series to Increase Local Fruit and Vegetable Production at the Local Market

Applicant:

Specialty Crop Extension Organization

Abstract:

Educate current and potential farmers about transitioning to specialty crop production for local consumption.

Project Purpose:

In order to meet the growing demand for locally-produced, fresh fruits and vegetables in the local area, the project will support farmers that plan to convert to specialty crops by providing educational workshops and field visits to commercial vegetable/fruit farms and field trips to the State University Research and Extension Center. Particularly, the focus will be on these growers need of an agricultural enterprise that can reliably generate profit. A successful transition to a comparable crop is needed to ensure that the economic well-being of these growers is preserved. Local producers in the State were dealt an unpleasant hand last year, when their longtime buyer, Corporation A, informed the State producers that no further contracts would be issued in the State. This created uncertainty in the establishment of a buyer willing to pay a fair price for local crops. The 2007 USDA Census of Agriculture reported that at least 25 percent of the State's crop production will be affected by this change in purchaser. As such, Corporation A's withdrawal will have an incredible impact on the value of agricultural production for this area of the State.

Fortunately, the growth in the number of farmers' markets and community supported agriculture ventures in this region currently outpaces the national average and local retailers and institutional buyers continue to seek locally grown fruits and vegetables. In fact, some producers are dabbling in specialty crops like sweet corn and melons, which increasingly requires a strong educational effort to inform these farmers of the challenges that they will face in their transition. This project has not been submitted for funding elsewhere.

Potential Impact:

The local fresh fruit and vegetable market is far from saturated and this project has the potential to impact not just participating farmers, but also local consumer markets throughout the west-central region of the State. Specifically, the farmers/potential producers that participate in the project will directly be impacted by becoming more knowledgeable about production practices and marketing options. There are currently more than 150 producers in the State, and 100 of these growers are members of the Commodity of America (CA) and/or the Growers Association (GA). Also, 40 new producers (not members of CA or GA in the State) have been identified. Because the value of specialty crops in comparison to traditional row crops is considerably higher, participants that elect to pursue fruit/vegetable production over other on-farm enterprises will increase their profit potential, thereby increasing their quality of life. Most importantly, former producers will become more confident in their ability to produce and market crops with a similar economic value.

Expected Measurable Outcomes:

Participants will become more knowledgeable about production practices of various specialty crops including vegetables and fruit (**GOAL**). They will also increase their awareness of specialty crop marketing opportunities. Currently, there is not any **BENCHMARK** data to compare this increase in knowledge or awareness; therefore, these short-term outcomes will be measured through a pre- and post- workshop assessment of the participants' knowledge and awareness concerning production practices and marketing. We plan to achieve an increase of 75 percent in both knowledge and awareness (**TARGET**). These surveys will utilize multiple choice and yes/no questions as well as the Likert Scale in order to collect data (**PERFORMANCE MEASURE**).

Work Plan:

There are two primary parts of this project: 1) Educational Workshops held at the County University Extension Center, and 2) Two in-season Field Visits to commercial vegetable/fruit farms and Field Trips to the State University Research and Extension Center. Additionally, participants in the project will be granted admission to the 2015 Specialty Crop Conference.

Workshops (November and December 2014)

The workshops will be a concerted effort on the part of the Extension's multidisciplinary faculty, other state institutions dedicated to nurturing the furtherance of State specialty crop production (University Extension), and industry personnel. There will be a total of three 4 hour workshops.

The first workshop will cover production practices for specific specialty crops commonly seen in the local food market (corn, tomatoes, beans, melons, etc.) Participants will gain a fundamental understanding of the production schedules for these crops from transplant production to harvest. University Extension Specialists committed to presenting information on production practices and profitability include Dr. Joe Smith, Horticulture Specialist, and Dr. Jane Smith, Horticulture Specialist.

The second workshop will introduce alternative agriculture products with additional information concerning high tunnel technology. Participants will become familiarized with a host of alternative commodity (i.e. Aronia berries, ethnic vegetables, etc) production through high tunnel technology. The high tunnel ability to extend production seasons and protect crops from environmental stresses makes them practically an essential tool for sustainable, local food producers. Industry personnel that have committed to this workshop include: Mr. Bob Smith and Ms. Betty Smith of Corporation B.

The third workshop will cover numerous market opportunities to sell specialty crops: specifically, farmers markets, on-farm sales, wholesale distribution, and cooperatives. Participants will increase their understanding of the variety of avenues available to specialty crop producers for selling their products. The University Extension Specialists committed to presenting information at this workshop is Ms. Mary Smith, Community Development Specialist. The industry personnel committed to this workshop is Mr. Mark Smith of Corporation C.

Field Trips (June and July 2015)

There will be two in-season field trips to commercial vegetable/fruit farms. Participants will observe operations and gain a more complete understanding of commercial vegetable/fruit operations. This is a fundamental part of the project because many growers have indicated that they are more likely to enter into specialty crop production after they have been educated and after they have seen examples of how it is done.

Farm Visits (May 2015)

There will be two other visits to specialty crop marketing and production sites. The first visit will be to the State University Research and Extension Center to learn about specialty crop production equipment. This trip will coincide with the May session of the Growing Growers Workshop Series. The second trip in May will be to the local produce auction site. Participants will watch as local produce and other local items are auctioned off. The auction manager has agreed to visit with the group about the auction process as well. In addition to seeing the produce auction, the Horticulture Specialist (Dr. Joe Smith) arranged two stops at specialty crop farms to visit with current growers.

Vegetable Growers' Conference (June 2015)

To supplement the education received during the workshops, participants will be granted full admission to the Vegetable Growers' Conference. This conference is coordinated by the Horticulture Specialists of State University Extension, and state specialists from four other regional universities. At this conference, participants will have the opportunity to immerse themselves into specific areas of production, harvesting, and marketing, as well as have the chance to network with fellow growers.

Project will begin in September 2014 and end in January 2016.

Project Commitment:

The University Extension is dedicated to increasing the quality of life all these growers over the course of this project. Specifically, the Extension field staff is very committed to seeing that these growers can replace their income. The team of educators that have already been identified readily communicated their interest in participating in this project. By bringing together Extension, the State, and industry personnel for this common goal, we feel that we can deliver a high-caliber program that complements the capacity of local agents. Furthermore, specialty crop producers in the area, particularly the Melon Association and the Sweet Corn Association, have specifically requested that such a program be designed to help their smaller members.

Budget Narrative ($12,669.00):

Personnel ($2,543.00):

University Extension Specialists Dr. Joe Smith and Dr. Jane Smith seek salary recovery consistent with their estimated time of commitment to the project. Dr. Joe Smith's estimated time spent on the project is 0.1 FTE (**$1,600**), and Jane Smith's estimated time spent on the project is 0.05 FTE (**$943**).

Fringe Benefits ($739.00):

State University's negotiated federal fringe rate is 29.05% of salary costs: Dr. Joe Smith, Horticulture Specialist (**$465**); Dr. Jane Smith, Horticulture Specialist (**$274**).

Travel ($1,667.00):

The estimated mileage for each speaker/coordinator is broken down by workshop. Mileage for these speakers is figured at the state rate of $0.55/mile traveled. Speakers will not be granted reimbursement for meals as they will have the opportunity to have a meal during the workshop (see 'Other' below).

Workshop 1:

There will be a speaker from City A (320 miles roundtrip) as well as two speakers and 1 coordinator traveling separately from City B (60 miles roundtrip per person) (**$275**).

Workshop 2:

There will be a speaker from City C (290 miles roundtrip) and two speakers travelling together from City B (60 miles roundtrip). Also, two coordinators will travel separately from City B (60 miles roundtrip per person) (**$258.50**).

Workshop 3

There will be a speaker from City C (290 miles roundtrip), a speaker from State B (240 miles roundtrip), a speaker from City A (320 miles round trip), as well as a speaker and coordinator travelling separately from City B (60 miles roundtrip per person) (**$533.50**).

It is estimated that approximately 25 farmers/potential farmers would participate in the trip to the produce auction. The round trip travel from City B to City D is estimated to range from $600-$850. We have planned for the lowest end of those estimates and request **$600** to cover the cost of chartering a bus. Though this trip will be over the lunch hour, we will require that participants be responsible for their own lunch.

Supplies ($200.00):

Because we want the information that is presented to the participants to be readily available to them and in one place, we will purchase forty notebooks at $5 (**$200**).

Other ($7,520.00):

Workshop expenses will include the price of extension publications as reference materials, printing expenses incurred by the University Extension, and meals. The facility is free for us to use. Extension publications for 40 participants will cost **$200**. Printing costs incurred by the University Extension for presentations and other resources is estimated to be **$75**. Meals for participants and presenters will be included since workshops will run from 5:00 pm to 9:00 pm. The provision of meals will maintain the continuity of the workshop and reduce the time needed to conduct the workshop. For 40 participants plus 5 organizers/speakers at $7/meal for 3 workshops, total meal expenses are **$945**.

For evaluation purposes, the expenses incurred for stationary, printing, and postage is estimated to be **$100**.

The Vegetable Growers' Conference is a three-day conference where participants will be granted admission to the conference; however, they are responsible for their own travel, accommodation, and meals. A community supported agriculture session will be held on Thursday ($65), while a wide array of breakout sessions will be held on Friday and Saturday ($35 each). It is estimated that there will be 40 participants for this conference (**$5,400**).

Our effort to publicize the project will encompass a variety of avenues including print, radio, and electronic forms of communication. Flyers will be produced to highlight the schedule of activities and solicit registrations. The cost for producing the flyers will be incurred by the University Extension (**$200**).

The Growing Growers workshop is held at the State University Horticulture Research and Extension Center outside of City F where participants (40) can see demonstrations of various production practices. Participants will be responsible for their own transportation to this event. Registration for this workshop is $15 per participant (**$600**).