

**Full Proposal**

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Grand Canyon University

ENG-245 Introduction to Grant Writing

Dr. A. Green

January 16, 2022

## GRANT PROPOSAL

### COVER PAGE

**PROJECT TITLE:**

Teal Road Farms Lavender Research, Beautification and Outreach Proposal

**NAME AND AFFILIATION OF PROJECT DIRECTORS:**

Name: Liz Blackburn

Position: Project Manager

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**PROJECT SUMMARY:**

Lavender has been used as a healing herb since ancient times throughout Greece, Italy, and Egypt. (Sansone, 2021). However, the increase in interest as well as the increase of end user purchasing power has left lavender farms struggling to keep up with the demand and find the proper varieties to grow for culinary, ornamental, as well as extraction. Lavender farms also struggle to find the right combination of soil, soil drainage and amendments that are needed to find success growing this specialized crop. We are planning for in-depth reporting to track the progress and outcomes on not only the various setup, amendments, and varieties to be reported in an in-house document that can be forwarded onto all interested parties as well as other farmers looking to learn about our research. Crop growth will be tracked monthly along with labor needed to help with harvest, any disease or pestilence that is experienced. An outreach program and various tourist beautification aspects of the farm will also be included within the proposal.

**TOTAL BUDGET REQUEST: \$26,752.00**

## EXECUTIVE SUMMARY

January 16, 2022

Ms. Tammi Neville  
SBIR Program Specialist  
Institute of Bioenergy, Climate, and Environment  
US. Department of Agriculture  
1400 Independence Ave., S.W.  
Washington, DC 20250

Dear Ms. Neville:

Through our research we have determined several factors of our project that coincide with the United State Department of Agriculture Small Business Innovation Research Program. As a female owned farm, we pride ourselves on developing products and research as well as ideas that will benefit not only our operation but other farms and lavender operations nationwide. We are pleased to submit a proposal that will coincide with your mission.

The 2022 Teal Road Farm project will seek to plant one acre each over three consecutive years with the approximate total of plants within these three acres totaling to 3,000. We will plan half of the first acre in raised beds and the other half to be in rows. Raised beds will be one hundred feet long. After the first year we will determine whether to continue doing half raised, half rows or to go to all one style of growing based on the results we receive. In this first acre we will focus on two varieties. One variety, *Lavandula angustifolia*, English Lavender and Royal Velvet are used more for culinary purposes due to their sweet perfume. The other half of the acre will contain varieties used for extraction for essential oils and products. This variety will mostly consist of be *Lavendula X. Intermedia*, Grosso. (U.S. Lavender Growers, 2021)

We are planning for in-depth reporting to track the progress and outcomes on not only the various setup, amendments, and varieties to be reported in an in-house document that can be forwarded onto all interested parties as well as other farmers looking to learn about our research. Crop growth will be tracked monthly along with labor needed to help with harvest, any disease or pestilence that is experienced.

## Proposal Narrative

**Need Statement:** Lavender has been used as a healing herb since ancient times throughout Greece, Italy, and Egypt. (Sansone, 2021). However, the increase in interest as well as the increase of end user buying power has left lavender farms struggling to keep up with the demand and find the proper varieties to grow for culinary, ornamental, as well as extraction. The demand for lavender as a culinary herb as well as for personal care products has grown exponentially in recent years. Persistence Market Research has conducted research into this growing industry and found that “In the year 2015, the Personal Care segment of the global lavender oil market was valued at a little more than \$25 Million and this should rise to just over \$45 Million by the end of the study period, registering the highest CAGR among all the application segments of the global lavender oil market. The Personal Care segment is estimated to create absolute opportunity of \$18.10 Million between 2016 and 2024” (Persistence Market Research, 2021).

Typically, Lavender requires a more arid climate to thrive so learning to grow lavender in the state of Missouri will have a learning curve. Lavender farms also struggle to find the right combination of soil, soil drainage and amendments that are needed to find success growing this specialized crop. However, there is a need for knowledge and the research areas as well as research farms are sorely lacking within the state of Missouri. Growing collaborations and sharing of knowledge over which types and varieties of plants that will survive the Missouri weather and climate will be valuable knowledge to share. Kelly McGowan with the University of Missouri Extension Office, states “There is a lot of interest and potential market for specialty crops like lavender that can be grown on smaller acreage, but we don’t have any research-based guidance and information to share with growers” (University of Missouri Extension Office, 2021).

**Project Description:** The 2022 Teal Road Farm project will seek to plant one acre each over three consecutive years with the approximate total of plants within these three acres totaling to 3,000. We will plan half of the first acre in raised beds and the other half to be in rows. Raised beds will be one hundred feet long. After the first year we will decide whether to continue doing half raised, half rows or to go to all one style of growing based on the results we receive. In this first acre we will focus on two varieties. One variety, *Lavandula angustifolia*, English Lavender

and Royal Velvet are used more for culinary purposes due to their sweet perfume. The other half of the acre will have varieties used for extraction for essential oils and products. This variety will mostly consist of be Lavendula X. Intermedia, Grosso (U.S. Lavender Growers, 2021).

The short-term goal is to get the land cleared and planted. Phase one of the project will consist of approximately one year of research and work. The job of prepping the land, buying the plants and planting the lavender will all take place in that first calendar year. The bulk of the clearing and amending of the soil for the 2<sup>nd</sup> acre (Phase two) to be planted will occur in the last two to three months of the Phase One planting and will continue with that schedule for each remaining phase. Scott Blackburn will manage the prepping and clearing of the land. Liz and Scott Blackburn will manage the bulk of the job of physically planting the lavender plants.

Phase two will mirror Phase one in it's clearing of land and planting format and scheduling. Phase one, two and Phase three will also incorporate extensive documentation. The long-term goal of the farm is to be able to document and share the research and knowledge that has been obtained with other Lavender Farmers both locally in Missouri and nationwide. Liz Blackburn will be the one to oversee the documentation part of the project. Documentation will consist of the types of Lavender plants that are thriving and successful. Plant growth, soil amendments and any pests and pest control measures will all be included in the learning information that the farm will produce. We are planning for in-depth reporting to track the progress and outcomes on not only the various setup, amendments, and varieties to be reported in an in-house document that can be sent onto all interested parties as well as other farmers looking to learn about our research. Crop growth will be tracked monthly along with labor needed to help with harvest, any disease or pestilence that is experienced.

**Applicant Qualifications:** This proposal is for the U.S. Department of Agriculture's Small Business Innovation Research Program (SBIR) and seeks \$26,752.00. Through our research we have determined several factors of our project that coincide with the United State Department of Agriculture Small Business Innovation Research Program. The philanthropic mission of the SBIR is to "offer grants to small and mid-sized farms with an emphasis on grant funding for developing new agricultural enterprises that focus on specialty farm products" (Chron, 2021). By funding this project the USDA will gain recognition as well as the

knowledge of being part of specialty research that will expand the SBIR Program to other Lavender farmers.

As a female owned farm, we pride ourselves on developing products and research as well as ideas that will benefit not only our operation but other farms and lavender operations nationwide. We are current members of the United States Lavender Growers Association. Liz and Scott Blackburn are well known throughout the community of Strafford, Missouri. Liz is also a member of the Care to Learn Advisory Board, a non-profit organization that helps our local school district. Scott Blackburn has been employed with O'Reilly Auto Parts for over 30 years.

**Sustainability:** The mission of our farm is to increase the knowledge and passion for this specialty crop. Once we get past the first three phases of the project and the funding for those, Teal Road Farms goal is to transition into a destination farm and flower farm. We will increase revenue by focusing on advertising and social media and the products that we will be adding to our retail line. Our retail line will incorporate both online and brick and mortar stores. Products will center around extraction for essential oils, soaps, candles, and hand salves. We also envision education courses, information or workshops that will allow the widespread use of the research we gained along the process. It is our hopes that through this retail and wholesale growth that the Farm can eventually take over funding of the business.

## **Evaluation Plan Summary – Teal Road Farm Lavender Phase 1**

**Goals of Evaluation:** There are two main goals of the Teal Road Lavender Farm Phase 1. The first is that an ample number of plants will be planted on a 1-acre parcel to supply enough plants, land and harvesting for research and study. The second is that adequate knowledge is gained as to which varieties of Lavender will thrive in Strafford, Missouri. By successfully implementing best practices to achieve these evaluation goals, the three larger impacts of the program will be achieved. These impacts include beautification of the land, providing a tourist destination and creating an environment for a partnership with the local high school and general public to create a work and educational farm program.

### **Evaluation Objectives:**

Objective 1: The 2022 Teal Road Farm project will seek to plant one acre of 1,000 plants by March 2023. We will plan half of the first acre in raised beds and the other half to be in rows. Raised beds will be one hundred feet long. After the first year we will decide whether to continue doing half raised, half rows or to go to all one style of growing based on the results we receive.

Objective 2: 1,000 plants of two varieties of Lavender will be researched as to their sustainability in Strafford, Missouri. One variety, *Lavandula angustifolia*, English Lavender and Royal Velvet are used more for culinary purposes due to their sweet perfume. The other half of the acre will have varieties used for extraction for essential oils and products. This variety will mostly consist of be *Lavandula X. Intermedia*, Grosso (U.S. Lavender Growers, 2021).

### **Methods:**

Physical Inspection will be done of the farm, land and plants by an external evaluator. Evaluator will assess whether Teal Road Farm has fulfilled the clearing and planting phase as documented in the proposal narrative. Inventory will be taken of actual plants. An external evaluator will conduct a physical exam twice annually. One inspection will be upon completion of planting and the second inspection will be in March of 2023. Documentation will be kept and reviewed of any loss of inventory, pestilence or any and all causes for plants to die.

Interviews will be conducted with the owners Scott and Liz Blackburn upon award of funds to determine a starting point for basis of knowledge and research of lavender farming. A

post interview will be conducted in March of 2023 to “determine the amount of knowledge the person has at the end and calculate the difference” (Coley & Scheinberg, 2017). Owners will share the knowledge they have gained and present it to the evaluator in a formal written document as well as an oral presentation. Owners will share different approaches, factors and considerations they will be implementing into Phase two of the project.

**Reporting:** The external evaluator will supply a biannual report to the United States Department of Agriculture. Each report will be sent within two weeks of physical inspections. Reporting will consist of details of the physical inspections of the farm, knowledge gained by owners and employees, ability to achieve goals and objectives. The evaluator will send pictures of the farm and the plants to ensure that the funder is kept apprised of the progress of the farm. The evaluator will also include with the report in March of 2023 all future plans for sustainability of the Farm once funding has ceased.



## **Budget Plan and Budget Narrative – Teal Road Farm Lavender Phase 1**

There are two main goals of the Teal Road Lavender Farm Phase 1

The first is that an ample number of plants will be planted on a 1-acre parcel to supply enough plants, land and harvesting for research and study. The second is that adequate knowledge is gained as to which varieties of Lavender will thrive in Strafford, Missouri. By successfully implementing best practices to achieve these evaluation goals, the three larger impacts of the program will be achieved. These impacts include beautification of the land, providing a tourist destination and creating an environment for a partnership with the local high school and public to create a work and educational farm program.

Thank you for allowing our submission of the Phase 1 - Teal Road Lavender Farm Project Budget for the calendar year of 2022. We believe this budget will allow us to achieve the two main goals of the Phase 1 objectives.

### **Budget Plan:**

## **Teal Road Lavender Farm Project Budget**

Funding Year: 2022\_\_\_\_\_

### **PROJECTED EXPENSES**

<b>Item</b>	<b>Amount</b>
<b>Assumptions: Planting area is 1 acre</b>	
Used Tractor from Auction	\$ 5,000.00
10 x 14 Enclosed Drying Shed	\$ 3,152.00
Fencing the land (for the cultivation of different commercial lavender species)	\$ 2,000.00
Irrigation System (Installation and materials)	\$ 5,000.00
Soil Test (\$25 per test)	\$ 100.00
Soil Preparation (labor and amendments)	\$ 2,000.00
Weed Fabric (labor and materials)	\$ 3,000.00
Mulch (labor and materials)	\$ 2,000.00
Lavender Plants (\$2 per plant and 500 plants)	\$ 1,000.00
Misc. Supplies (sickles, torches, rubber bands, drying racks, chains, etc.)	\$ 1,000.00
 <b>Operating Expense</b>	
Key Insurance policies, permits and business license	\$ 2,500.00
 <b>Total Expenses</b>	 <b>\$ 26,752.00</b>

**Budget Narrative:****Land Prep and Planting:**

**Kubota LB400 Tractor** can be purchased used for around \$5,000. This piece of equipment should provide us with the capabilities to use various attachments that will aid in the planting and harvesting of the lavender plants. Attachments will include a brush hog for clearing land. A rock rake for removing large rocks and debris. A post hole digger will also be used for the planting of the Lavender in these early years.

**10 x 14 Enclosed Drying Shed** will be used for drying the lavender. Lavender must be dried in a warm, dark location. The size of the shed will allow the farm to continue to grow and plant more fields in years to come.

**Fencing** the land for the cultivation of different commercial lavender species. The acreage of lavender fields will need to be fenced to keep cattle from grazing in the field. The phase 1 acre of land is approximately 209 feet long on each side and costs for barbed wire will run between \$1.50 to \$2.25 per acre.

**Irrigation System:** While Lavender is a very drought tolerant plant. Watering the cuttings or new plants is critical to ensuring the plants are established. Various calculations exist on the amount of water that lavender plants need and will vary depending on the amount of rainfall each year.

**Soil Test** are necessary for planting a successful crop. Lavender prefers well-drained soil that is slightly alkaline. Assessing the soil in multiple spots throughout the acre will allow us to obtain the knowledge of what type of soil exists on the acre. This knowledge is important to ensure the proper amendments which will result in less root rot or disease and allow for a successful, thriving crop.

**Weed fabric** will be laid in all the rows of lavender plants to help mitigate and control weeds. For the first research phase 25 rows will be planted with approximately 40 plants per row. As research is conducted and data interpreted as to what the best lavender variety to grow; the rows and number of plants may be adjusted or increased to allow for a greater harvest for the farm.

**Mulch** will be used in soil amendments and around plants to provide proper drainage. This amount could fluctuate based upon the results of the soil testing.

**Lavender Plugs** The actual plants will be purchased as plugs from reputable growers. We will be working with the Native Woods Garden Center to purchase direct from a distributor to obtain the best pricing. Native Woods has quoted approximately \$2 per plug with shipping included in that cost.

**Miscellaneous supplies** such as sickles, torches, rubber bands, drying racks, chains and other miscellaneous supplies will need to be purchased. These tools will aid in the planting, harvesting and drying of the lavender. All tools will be kept in the drying shed to ensure the longevity of the reusable equipment.

**Insurance policies, permits and business licenses** will need to be purchased to protect the project. Volunteers will be completing some of the work and the liability of laborers and equipment needs to be covered to ensure the succession of the project.

**APPENDIX**

**Images of Lavender Varieties**

**English Lavender**



**Grosso Lavender**



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