

**New Hampshire**  
 Department of Agriculture,  
 Markets & Food

Shawn N. Jasper, Commissioner

January 15, 2020

His Excellency, Governor Christopher T. Sununu  
 and the Honorable Council  
 State House  
 Concord, New Hampshire 03301

**REQUESTED ACTION**

Authorize the New Hampshire Department of Agriculture, Markets and Food, Division of Agricultural Development (DAMF) to enter into a Grant Agreement with the University of New Hampshire Cooperative Extension, vendor #177867, for the period of Governor and Council approval to September 29, 2022 in the amount of \$42,990.00 to conduct research to evaluate the suitability of hydrangea cultivars for production in New Hampshire's climate and development as a cut flower crop. 100% Federal Funds – Specialty Crop Block Grant.

Funding is available in account, Spec Crop State Grant I, as follows with the authority to adjust encumbrances in each of the State fiscal years through the Budget Office if needed and justified as approved in the FY 20 & 21 budget and pending approval of the FY 22 & 23 budget.

Funding is available as follows: 02-18-18-185010-28200000 Specialty Crop Block Grant

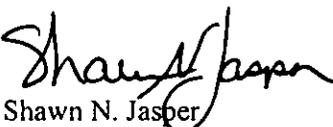
<u>ACCOUNT</u>	<u>FY 2020</u>	<u>FY2021</u>	<u>FY2022</u>	<u>TOTAL</u>
072-500573 Grants to Schools – Federal	\$14,000	\$25,000	\$3,990	\$42,990

**EXPLANATION**

The New Hampshire Department of Agriculture, Markets & Food (DAMF) received Specialty Crop Block Grant (SCBG) money from the United States Department of Agriculture to fund eight specific projects. The projects were solicited through the RFP process and submitted for review by USDA, Agricultural Marketing Service as part of our state application. The proposal submitted by the UNH Cooperative Extension was one of the projects accepted by USDA for funding.

In the event that these Federal funds become no longer available, General Funds will not be requested to support this program.

Respectfully submitted,

  
 Shawn N. Jasper  
 Commissioner

**COOPERATIVE PROJECT AGREEMENT**

between the

**STATE OF NEW HAMPSHIRE, Department of Agriculture, Markets and Food**

and the

**University of New Hampshire of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE**

A. This Cooperative Project Agreement (hereinafter "Project Agreement") is entered into by the State of New Hampshire, **Department of Agriculture, Markets and Food**, (hereinafter "State"), and the University System of New Hampshire, acting through **University of New Hampshire**, (hereinafter "Campus"), for the purpose of undertaking a project of mutual interest. This Cooperative Project shall be carried out under the terms and conditions of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, except as may be modified herein.

B. This Project Agreement and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire approve this Project Agreement ("Effective date") and shall end on **9/29/22**. If the provision of services by Campus precedes the Effective date, all services performed by Campus shall be performed at the sole risk of Campus and in the event that this Project Agreement does not become effective, State shall be under no obligation to pay Campus for costs incurred or services performed; however, if this Project Agreement becomes effective, all costs incurred prior to the Effective date that would otherwise be allowable shall be paid under the terms of this Project Agreement.

C. The work to be performed under the terms of this Project Agreement is described in the proposal identified below and attached to this document as Exhibit A, the content of which is incorporated herein as a part of this Project Agreement.

**Project Title: Identifying cold-hardy hydrangea cultivars for cut-flower production and sales in New Hampshire**

D. The Following Individuals are designated as Project Administrators. These Project Administrators shall be responsible for the business aspects of this Project Agreement and all invoices, payments, project amendments and related correspondence shall be directed to the individuals so designated.

**State Project Administrator**

Name: Gail McWilliam Jellie  
Address: NH Dept. Agriculture, Markets & Food  
PO Box 2042  
Concord, NH 03302-2042  
Phone: 603 271-3788

**Campus Project Administrator**

Name: Cheryl Moore  
Address: University of New Hampshire  
Sponsored Programs Administration  
51 College Rd. Rm 113  
Durham, NH 03824  
Phone: 603-862-1992

E. The Following Individuals are designated as Project Directors. These Project Directors shall be responsible for the technical leadership and conduct of the project. All progress reports, completion reports and related correspondence shall be directed to the individuals so designated.

**State Project Director**

Name: Gail McWilliam Jellie  
Address: NH Dept. Agriculture, Markets & Food  
PO Box 2042  
Concord, NH 03302-2042  
Phone: 603 271-3788

**Campus Project Director**

Name: Becky Sideman  
Address: UNH Spaulding Hall  
38 Academic Way  
Durham, NH 03824  
Phone: 603 862-3203

F. Total State funds in the amount of \$42,990.00 have been allotted and are available for payment of allowable costs incurred under this Project Agreement. State will not reimburse Campus for costs exceeding the amount specified in this paragraph.

Check if applicable

Campus will cost-share 0 % of total costs during the term of this Project Agreement.

Federal funds paid to Campus under this Project Agreement are from Grant/Contract/Cooperative Agreement No. AM190100XXXXG012 from AMS/USDA under CFDA# 10.170. Federal regulations required to be passed through to Campus as part of this Project Agreement, and in accordance with the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, are attached to this document as Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

G. Check if applicable

Article(s) of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002 is/are hereby amended to read:

No indirect costs allowed

H.  State has chosen **not to take** possession of equipment purchased under this Project Agreement.

State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

This Project Agreement and the Master Agreement constitute the entire agreement between State and Campus regarding this Cooperative Project, and supersede and replace any previously existing arrangements, oral or written; all changes herein must be made by written amendment and executed for the parties by their authorized officials.

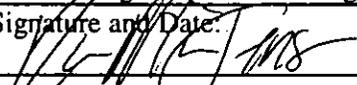
IN WITNESS WHEREOF, the University System of New Hampshire, acting through the University of New Hampshire and the State of New Hampshire, Department of Agriculture, Markets & Food have executed this Project Agreement.

**By An Authorized Official of:**

**University of New Hampshire**

Name: Karen M. Jensen

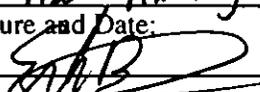
Title: ~~Manager~~, Sponsored Programs Administration

Signature and Date:  10/29/19

**By An Authorized Official of: the New Hampshire Office of the Attorney General**

Name: ERIC BAL

Title: Ass't. Attorney General

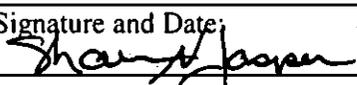
Signature and Date:  2/4/2020

**By An Authorized Official of:**

**NH Dept. of Agriculture, Markets & Food**

Name: Shawn N. Jasper

Title: Commissioner

Signature and Date:  11/14/2020

**By An Authorized Official of: the New Hampshire Governor & Executive Council**

Name:

Title:

Signature and Date:

## EXHIBIT A

- A. Project Title:** Identifying cold-hardy hydrangea cultivars for cut-flower production and sales in New Hampshire
- B. Project Period:** April 1, 2020 - September 29, 2022
- C. Objectives:** University of New Hampshire Cooperative Extension will identify suitable panicle and oakleaf hydrangea cultivars for cut flower production and sales in New Hampshire and share results in a cultivar selection guide and at grower meetings throughout the state.
- D. Scope of Work:** The floriculture and bedding plant industry is one of the top agricultural commodities in New Hampshire, generating 32.9 million dollars annually. There are currently 111 farms covering 97 acres across the state that report producing cut flowers and greens, and the cut flower crops produced by these operations are valued at 1.1 million dollars annually (USDA, 2017). Most notable, is that the number of farms producing field-grown cut flowers in New Hampshire has increased by 60% in the ten years from 2007 to 2017 (USDA, 2012; 2017). This dramatic expansion suggests that cut flowers are an increasingly important specialty crop in the state, and illustrates that consumer demand is strong for regionally-grown flowers. Due to this trend, it is likely that other farming operations, including fruit, vegetable, or dairy producers, will consider growing and preserving flowers as an additional value-added product.

Using woody perennials as cut flowers provides some additional benefits over more traditional herbaceous cut flowers. While plant material is more expensive and takes longer to mature, once established, they are relatively low maintenance and will produce harvestable product for many years. Woody stems often command high prices and expand the repertoire of growers and florists beyond traditional herbaceous material. Hydrangeas are suitable for sale as fresh or dried product, extending the market window into the winter months. Further, woody shrubs can also provide additional ecosystem services to growing operations, with their extensive perennial root systems capturing nutrients and slowing erosion, in some cases acting as riparian buffers, and provide an excellent pollinator habitat.

Hydrangea (*Hydrangea* spp.) is a deciduous shrub native to Asia and the Americas, including Eastern North America. Its popularity has grown internationally in recent years (Kitamura et al., 2018) and it is sought after by florists and consumers for its' large size, texture, and range in colors. The most commonly sourced hydrangea, which is famous for growing throughout Cape Cod, Massachusetts (and south) is the "big leaf" hydrangea (*H. macrophylla*). However, the flower buds of this species are only winter hardy through USDA Zone 6 and winter injury (and death) is a common occurrence when cultivars are grown in northern New England. This has prevented the commercial farming community from supplying florists and retail-markets with cultivars of this species. Although there have been many recent introductions of more hardy, remontant cultivars (that form floral buds on new wood) to the landscape market, personal experience (C. Neal, UNH Extension) shows them to be too unreliable for cut flower production.

Conversely, "panicle" (*H. paniculata*) and "oakleaf" (*H. quercifolia*) hydrangeas are quite cold tolerant, with the panicle hydrangea hardy through USDA Zone 4 (nearly the entire state of NH) and oakleaf through Zone 5. Both species are available in a range of colors (white, green, magenta, light-

pink, and purple) and textures (both lacey, loose, and dense) and have an attractive cone-like shape. These characteristics make the panicle and oakleaf species promising for cut flower production in New Hampshire. New varieties are constantly being offered for landscape use, but little or no information on cultivar performance is available to guide growers in selecting those that will perform best for cut flower production. Currently, no studies have evaluated cultivars of these species in the Northeast or beyond, making providing recommendations to the commercial farming community nearly impossible.

Through a preliminary survey of both cut flower growers and florists, we found that panicle hydrangeas have a positive reputation among the floral design community. Florists indicated that they prefer smaller heads (4 – 5” in diameter) and stems ranging from 12 – 20”, and cited a reliable shelf-life of at least a week as being crucial. Color (in both fresh and dried forms), shape, and performance in the landscape were also cited as important attributes, and all respondents supported the need for the type of work we are proposing. All florists surveyed indicated they were interested in purchasing locally produced hydrangea stems, and all growers surveyed who do not currently grow hydrangea, indicated interest in doing so.

In this project, we propose to evaluate at least eight (8) hydrangea cultivars from the cold-hardy panicle and oakleaf species. Shrubs will be sourced from commercial nurseries and planted in a replicated field trial at Woodman Horticultural Research Farm in Durham. The proposed project lasts 2.5 years to enable sufficient time for the plants to establish prior to cut flower data collection. To determine cultivar suitability for New Hampshire, we plan to collect data on a number of quality parameters, including: winter survival, flower bud hardiness, annual growth rate, stem-length and number, head size, flower color, flowering time and duration, shelf-life, and disease incidence and pest challenges. Qualitative factors governing the ease of pruning, stem strength, and flower texture will also be recorded.

#### Project Objectives:

Objective 1: To evaluate the establishment success and cold-hardiness of panicle and oakleaf hydrangea cultivars in New Hampshire by measuring winter bud survival, first bud break, vigor in the following year, disease incidence, and other important qualitative factors.

Objective 2: To determine the suitability of panicle and oakleaf cultivars for use as cut flowers by measuring a number of characteristics that are important to growers and florists, including: flowering time and flowering duration, stem length, head size, flower color, and shelf-life.

Objective 3: Raise awareness among commercial farmers and floral designers regarding the potential of perennial hydrangea shrubs as a perennial cut flower crop. We will also conduct outreach efforts, including workshops at the Woodman Research Farm where cultivars will be showcased.

#### Project Beneficiaries:

The primary intended beneficiaries of this project are commercial growers that produce and sell cut flowers; as well as farmers of other crops who are interested in diversifying their offerings to include cut flowers. We believe that by providing growers regionally-based information, we can support local cut flower production and increase sales to local florists. In recent years, New Hampshire farmers have been very successful in fostering relationships with restaurants for wholesale produce sales, and we believe the same relationship is possible with florists throughout the state. Thus, the secondary intended beneficiaries of this project are florists, as an increase in local cut flower production would broaden their selection and potentially be a marketing opportunity.

Furthermore, landscapers and gardeners will benefit from the data collected and recommendations made in this project. Lastly, to our knowledge, there are no published replicated studies investigating panicle and oakleaf cultivars in the U.S. Thus, while the results from this project will be primarily useful in the Northeast, they will also be useful to researchers and extension professionals in similar hardiness zones throughout the U.S.

Estimate the number of project beneficiaries: 50

Does this project directly benefit socially disadvantaged farmers as defined in the RFA? While the project is not specifically targeting socially disadvantaged farmers, it will provide information that such farmers could use.

Does this project directly benefit beginning farmers as defined in the RFA? While the project is not specifically targeting beginner farmers, it will provide information that beginner farmers could use. We will make sure to specifically reach groups such as the Small & Beginning Farmers of NH with our outreach activities.

Statement of Enhancing Specialty Crops: I confirm that this project solely enhances the competitiveness of specialty crops in accordance with and defined by 7 U.S.C 1621.

Continuation of Project: N/A

Other Support from Federal or State Grant Programs: This project has not been submitted to or funded by another federal or state granting program.

If your project is receiving or will potentially receive funds from another federal or state grant program: We are not applying to other federal or state grant programs to support this project. However, the project will take place at UNH Woodman Horticultural Farm, part of the NH Agricultural Experiment Station, which receives federal funding. Thus, parts of the project are indirectly supported by other federal funds. We also intend to apply to other foundation sources (e.g. non-federal, non-state) of funding to purchase additional plant material to enhance this study.

Identify the Federal or State grant program(s): see above.

Describe how the SCBGP project differs from or supplements the other grant program(s): The SCBGP will provide funding for the labor and supplies specifically for this project. The NH Agricultural Experiment Station will provide the land and laboratory facilities in which the work will be conducted.

External Project Support:

Both cut flower growers and florists have expressed support of this project and excitement at the prospect of research being conducted in New Hampshire on perennial woody crops. We have connected directly with several prominent florists and growers, including: The Flower Kiosk, Portsmouth (Florist), Jardiniere Flowers, Portsmouth (Florist and Grower), Pinewoods Yankee Farm, Lee (Florist and Grower), Spring Ledge Farm, New London (Florist and Grower), and Inkwell Flowers, Newmarket (Florist and Grower). Most have expressed interest in continued involvement in the project, providing external guidance and advice. Cathy Neal, Extension Specialist in Landscape and Nursery Crops, will also act as a project advisor.

**Expected Measurable Outcomes:**

**Outcome 4, Indicator 2.a:** Adoption of best practices and technologies resulting in increased yields, reduced inputs, increased efficiency, increased economic return, and conservation of resources (select at least one below). Number of growers/producers indicating adoption of recommended practices: 25

**Outcome 5, Indicators 1 and 3:**

1. Number of new or improved innovation models (biological, economic, business; management, etc.), technologies, networks, products, processes, etc. developed for specialty crop entities including producers, processors, distributors, etc.: 2
3. Number of specialty crop growers/producers (and other members of the specialty crop supply chain) that have increase revenue expressed in dollars: 25

Data collection to report on outcomes and indicators: We will collect data on the number of participants, their learning outcomes, and their intended adoption of new practices and changes in revenue from cut flower production at University field days; twilight meetings, and grower conferences related to this project. At twilight meetings and field days, data will be collected verbally and through group Q&A; at workshops and conferences, data will be collected through formal paper evaluations; and we will distribute a Qualtrics survey through our social media (Instagram, facebook) and extension outreach networks at the conclusion of the project. We will also document communication that we have with those in the florist and growing community by maintaining a project communications spreadsheet that includes a consistent set of information (contact information, dates and nature of information exchanged) throughout the project. All project data will be maintained in shared Box folders so that all project partners can access them at any time.

**E. Deliverables Schedule:** 6 month and annual reports on project activity due in June and December of 2020; 2021 and 2022. Final printed and digital report due by December 31, 2022

**F. Budget and Invoicing Instructions:** Campus will submit invoices to State on regular Campus invoice forms no more frequently than monthly and no less frequently than quarterly. Invoices will be based on actual project expenses incurred during the invoicing period, and shall show current and cumulative expenses by major cost categories. State will pay Campus within 30 days of receipt of each invoice. Campus will submit its final invoice not later than 30 days after the Project Period end date of September 29, 2022.

Budget Items	State Funding	Cost Sharing (if required)	Total
1. Salaries & Wages	\$36,067.00	0.00	\$36,067.00
2. Employee Fringe Benefits	5,133.00	0.00	5,133.00
3. Travel	0.00	0.00	0.00
4. Supplies	1,790.00	0.00	1,790.00
5. Contractual	0.00	0.00	0.00
6. Other	0.00	0.00	0.00
<b>Subtotals</b>	<b>\$42,990.00</b>	<b>0.00</b>	<b>\$42,990.00</b>
<b>Total Project Costs:</b>			<b>\$42,990.00</b>

## EXHIBIT B

This Project Agreement is funded under a Grant/Contract/Cooperative Agreement to State from the Federal sponsor specified in Project Agreement article F. All applicable requirements, regulations, provisions, terms and conditions of this Federal Grant/Contract/Cooperative Agreement are hereby adopted in full force and effect to the relationship between State and Campus, except that wherever such requirements, regulations, provisions and terms and conditions differ for INSTITUTIONS OF HIGHER EDUCATION, the appropriate requirements should be substituted (e.g., OMB Circulars A-21 and A-110, rather than OMB Circulars A-87 and A-102). References to Contractor or Recipient in the Federal language will be taken to mean Campus; references to the Government or Federal Awarding Agency will be taken to mean Government/Federal Awarding Agency or State or both, as appropriate.

Special Federal provisions are listed here:  None or  **Uniform Guidance issued by the Office of Management and Budget (OMB) in lieu of Circulars listed in paragraph above.**