New Hampshire
Department of Agriculture, Markets, and Food

Shawn N. Jasper, Commissioner

29

June 24, 2025

Her Excellency, Governor Kelly A. Ayotte
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 Cooperative Project Agreement with the University System of New Hampshire (Vendor Code #315187) in the amount of $67,395.00 for the purpose of research and mitigation of fungal disease in high tunnel specialty crops, effective upon Governor and Council approval through July 31, 2027. **100% Federal Funds.**

Funding is available in account, Specialty Crop Block Grant II (SCBG), in Fiscal Year 2026 as follows with the authority to adjust encumbrances in each of the State fiscal years within the price limitation through the Budget Office, if needed and justified.

02-18-18-185010-33460000 Specialty Crop State Grant II

	FY2026
072-500574 Grants Federal	$67,395.00

EXPLANATION

The New Hampshire Department of Agriculture, Markets & Food (DAMF) received SCBG money from the United States Department of Agriculture to fund projects that increase the competitiveness of specialty crops in New Hampshire. 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 University of New Hampshire was one of the projects accepted by USDA for funding as enumerated in the CPA.

University of New Hampshire research will examine humidity control strategies to mitigate fungal disease for high tunnel specialty crop production. This research will help NH high tunnel specialty crop producers to control humidity and prevent condensation inside their high tunnels by developing novel strategies for year-round production. The research results and recommendations will be disseminated through local conferences and grower meetings. The production enhancement of specialty crops will help growers generate more revenue, strengthen the local specialty crop supply, reduce the retail price for specialty crop consumers, and increase food safety in New Hampshire region.

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 **7/31/27**. 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: **Defining Humidity Controlling Strategy to Mitigate Fungal Disease for High Tunnel Specialty Crop Production (2024 SCBG Project #1)**

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	**Campus Project Administrator**
Name: Rebecca Ross	Name: Gretchen Swain
Address: NH Dept. of Agriculture, Markets, and Food 1 Granite Place Suite 211 Concord, NH 03301	Address: Sponsored Programs Administration 51 College Rd Durham, NH
Phone: 603-271-8071	Phone: 603-862-4865

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	**Campus Project Director**
Name: Rebecca Ross	Name: Md Sazan Rahman
Address: NH Dept. of Agriculture, Markets, and Food 1 Granite Place Suite 211 Concord, NH 03301	Address: University of NH 226 Kendall Hall 129 Main St Durham, NH 03824
Phone: 603-271-8071	Phone: 603-862-4893

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F. Total State funds in the amount of **$67,395.00** 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 % 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. **USDA-AMS-24SCBPNH1252-00** 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, and Food** have executed this Project Agreement.

By An Authorized Official of:
University of New Hampshire

Name: Karen Jensen
Title: Director, Pre-Award Compliance
Signature and Date: Karen Jensen Digitally signed by Karen Jensen Date: 2025.06.18 15:29:22 -04'00'

By An Authorized Official of:
NH Dept. of Agriculture, Markets, and Food

Name: Shawn N. Jasper
Title: Commissioner
Signature and Date: Shawn N. Jasper 6/24/25

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

Name: Louise Williams
Title: Assistant Attorney General
Signature and Date: Louise D. Williams 7-11-25

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

Name:
Title:
Signature and Date:

EXHIBIT A

A. **Project Title:** Defining Humidity Controlling Strategy to Mitigate Fungal Disease for High Tunnel Specialty Crop Production (2024 SCBG Project #1)

B. **Project Period:** 8/1/25 - 7/31/27

C. **Objectives:** The University of New Hampshire researcher will help NH high tunnel specialty crop producers to control humidity and prevent condensation inside their high tunnels by developing novel strategies for year-round production and by disseminating the research results and recommendations through local conferences and grower meetings.

D. **Scope of Work:** In New Hampshire, the outdoor crop production time is only 135 days, considering approximately 230 days between the first and last frost. High tunnels, low tunnels, and row covers are increasingly popular, lengthening the growing seasons, mainly to push the harvest time a little further to have maximum crop quality and yield. Several of the high tunnel growers are trying to start year-round production by growing leafy greens and other high-value winter crops along with their regular production schedule. However, plant production diminishes due to high humidity and humidity-based fungal disease, which makes them less interested in high tunnel offseason crop production. Therefore, it is necessary to develop a novel humidity controlling strategy utilizing their existing structure and technologies to control year-round indoor humidity and prevent uncontrolled condensation. In this research, a novel humidity-controlling strategy will be developed numerically (in MATLAB) to assess the indoor humidity controlling influence of local year-round outdoor weather conditions, indoor evaporation, plant's transpiration, high tunnel construction materials, air infiltration/ventilation, and condensation prevention or controlling setpoint (dynamic due points), for local high tunnel producers. The developed strategy will be validated in a commercial-sized research high tunnel for year-round specialty crop production (spinach in winter and tomato in the rest of the time), and the results will be reported to all specialty crop high tunnel producers in the state. By using this novel humidity controlling strategy, we hypothesize that a grower can enhance year-round specialty crop production with stable indoor humidity and minimal fungal disease without significantly changing their high tunnel infrastructure and/or without any sophisticated technological investments. This newly developed technology could be used for any other specialty crop growing high tunnels regardless of crop types. Production enhancement of specialty crops will help growers on making more revenue, strengthen the local specialty crop supply, reduce the retail price for specialty crop consumers, and will highly increase the food safety in New Hampshire region.

The scope of this project shall be construed consistent with the Project Plan as approved by USDA, AMS which hereby incorporated by reference including compliance with all federal requirements as indicated in the Project Plan.

PROJECT OJECTIVES:

Objective 1: Designing a novel year-round humidity-controlling strategy based on local common crops, technologies, and local weather conditions.

Objective 2: Validating the novel humidity controlling strategy in the UNH research high tunnel for two model crops (tomato and spinach).

Objective 3: Quantify and compare the disease rate and crop quality between the newly strategized high tunnel and a regular nonstrategized high tunnel for year round crop production.

STAKEHOLDERS:

High humidity and condensation control is considered essential in year-round high tunnel production. In the last High Tunnel Production Conference (December 6-7, 2023, West Lebanon, NH), growers and researchers were agreed that the high humidity is one of the major barriers to mitigating diseases and pests that restrict crop production, regardless of the crop types and/or growing seasons.

Three major research and education recommendations/requests came from that meeting, including (i) effective ventilation design, (ii) best practice on data collection, and (iii) Disease and pests: prevent/treat/manage. Importantly, this project is addressing two (1st and 3rd) out of three recommendations. Therefore, the growers, practitioners, extension educator, and other stakeholders with whom we discussed this project are strongly supportive of it.

EXPECTED MEASURABLE OUTCOMES

Outcome 6: Expand Specialty Crop Research and Development. Indicators:

6.1 - Number of research goals accomplished: 3;

6.2a -Yielded findings that supported continued research: 1;

6.2b - Yielded findings that led to completion of study: 2;

6.2c - Yielded findings that allow for implementation of new practice, process or technology: 3;

6.4 - Total number of reseach outputs published to industry publications and/or academic journals, and for each published research output, the: 2;

6.4a- Number of views/reads of published research/data: 40; 6.4b - Number of citations counted: 10

Outcome 7. Improve Environmental Sustainability of Specialty Crops. Indicators:

7.1 Number of stakeholders that gained knowledge about environmental sustainability best practices, tools, or technologies: 100;

7.2 Number of stakeholders reported with an intent to adopt environmental sustainability best practices, tools, or technologies:30;

7.3 Number of producers that adopted environmental best practices or tools: 10;

7.4 Number of new tools/technologies developed or enhanced to improve sustainability/conservation or other environmental outcomes: 3.

DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS

Improved humidity control (through this novel strategy) not only provides a better crop-producing environment (outcome 7) but also reduces many high-humidity based diseases, combining planting, ventilation, and structural modification strategies. Information regarding outcomes will be mostly collected from the high tunnel production conferences. The most recent local conference attendance was 147, including 115 crop producers. Outcomes 6.1 and 6.2b will be presented through one conference presentation and one peerreviewed journal paper (as mentioned in 6.4). On that strategy development and evaluation, outcome 6.2a will be the ultimate dehumidification requirement (if any) of high tunnel after applying all strategies, which may lead to further investigations. Outcome 6.1c and 7.4 will be ensured by designing and evaluating new ventilation, planting, and structural

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modification practices/processes as a result of this project. The research presentation is expected to be attended by at least 40 growers (ensured 6.4a), and for 6.4b, the journal article citation will be counted from google Scholar. Outcome 7.1 will also be ensured by presenting the results in a high tunnel conference and collecting data from the participants. Once the strategies are developed, tested, and advertised to the growers, outcome 7.2 and 7.3 data will be collected by UNH extension educators and by following up with the growers.

All reporting and publication shall be in accordance with USDA requirements and are subject to change as directed by USDA - AMS. Acknowledgement of support shall be included as required in 2 C.F.R. section 415.2. The following acknowledgment of USDA funding must appear in all published materials or products, in any format (web sites, audiovisuals, etc.), that are substantially based upon or developed under an AMS award:

"Funding for [Project or Publication] was made possible by a grant/cooperative agreement from the U.S. Department of Agriculture (USDA) Agricultural Marketing Service. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the USDA."

E. Deliverables Schedule: 6 month and annual reports on project activity due in June and December of 2025, 2026 and 2027. Final printed and digital report due by December 31, 2027

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 as shown below. State will pay Campus within 30 days of receipt of each invoice. Campus will submit its final invoice not later than 60 days after the Project Period end date.

Budget Items	State Funding
1. Salaries & Wages	$56,251.00
2. Fringe Benefits	$4,444.00
3. Travel	$1,000.00
4. Supplies and Services	$5,700.00
5. Equipment	$0.00
6. Indirect Costs	$0.00
Total	$67,395.00

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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 **No indirect costs allowed.**

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