

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

47

Lorraine S. Merrill, Commissioner

March 16, 2015

Her Excellency, Governor Margaret Wood Hassan  
 and the Honorable Council  
 State House  
 Concord, New Hampshire 03301

Dear Governor Hassan and Honorable Council:

**REQUESTED ACTION**

Authorize the New Hampshire Department of Agriculture, Markets and Food, Division of Pesticide Control to grant funds and enter into a Cooperative Project Agreement, in the amount of \$23,089, with the University of New Hampshire Office of Sponsored Research, vendor #177867, for the advancement of agricultural research and to assist in the promotion of Integrated Pest Management practices in New Hampshire, for the period from Governor and Council approval through April 1, 2016. 100% Other Funds - Integrated Pest Management Fund.

Funding is available in account, Integrated Pest Management, as follows:**02-18-18-183010-21820000 INTEGRATED PEST MANAGEMENT**

## OBJECT

<u>CLASS</u>	<u>ACCOUNT</u>	<u>FY 2015</u>	<u>Total</u>
075-500590	Integrated Pest Mgmt	\$23,089	\$23,089

**EXPLANATION**

The New Hampshire Department of Agriculture, Markets and Food (NHDAMF), Division of Pesticide Control in fulfilling its responsibilities under the Integrated Pest Management (IPM) Program, RSA 430:50; to promote the principles of IPM and assist New Hampshire citizens to advance the practice of such principles, has reviewed the project, "2015 Trapping Program for Brown Marmorated Stink Bug in NH", and finds it exemplifies good practices associated with Integrated Pest Management. The research and educational aspects associated with this project and the efforts of the University of New Hampshire Cooperative Extension identify and establish the presence and treatment methods for an insect pest that is of economic significance relative to fruits, vegetables and shade trees to control. The experience and results of this project serve the benefit of all citizens of New Hampshire. The attachment includes a summary of the project and the dollar amount associated with each component.

Respectfully submitted,

02 Lorraine S. Merrill  
 Commissioner

**COOPERATIVE PROJECT AGREEMENT**

between the

STATE OF NEW HAMPSHIRE, **Department of Agriculture, Markets & 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 & 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 **4/1/16**. 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: **2015 Trapping Program for Brown Marmorated Stink Bug in NH**

- 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: David J. Rouseau  
 Address: State House Annex  
25 Capitol Street  
P.O. Box 2042  
Concord, NH 03301  
 Phone: 603 271-3640

**Campus Project Administrator**

Name: Dianne Hall  
 Address: University of New Hampshire  
Sponsored Programs Administration  
51 College Rd. Rm 116  
Durham, NH 03824  
 Phone: 603-862-1942

- 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: David J. Rouseau  
 Address: State House Annex  
25 Capitol Street  
P.O. Box 2042  
Concord, NH 03301  
 Phone: 603 271-3640

**Campus Project Director**

Name: George Hamilton  
 Address: UNH Cooperative Extension  
Hillsborough Country  
329 Mast Road, Room 101  
Goffstown, NH 03045  
 Phone: 603 641- 6060

F. Total State funds in the amount of \$23,089 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. \_\_\_\_\_ from \_\_\_\_\_ under CFDA# \_\_\_\_\_. 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:

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: \_\_\_\_\_ 3/10/15

**By An Authorized Official of:  
Department of Agriculture, Markets & Food**

Name: Lorraine Merrill  
Title: Commissioner  
Signature and Date: \_\_\_\_\_ 3-16-15

**By An Authorized Official of: the New  
Hampshire Office of the Attorney General**  
Name: ~~Rosemary Wiant~~ Brian Buonamano  
Title: Assistant Attorney General

Signature and Date: \_\_\_\_\_ 3/30/15

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

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Signature and Date: \_\_\_\_\_

**EXHIBIT A**

- A. Project Title:** 2015 Trapping Program for Brown Marmorated Stink Bug in NH
- B. Project Period:** Upon Governor and Council Approval through April 1, 2016
- C. Objectives:** The objectives of the University of New Hampshire are to assist the Department of Agriculture, Markets & Food in the promotion and advancement of Integrated Pest Management in New Hampshire
- D. Scope of Work:** A detailed scope of work is on file with the Department of Agriculture, Markets & Food and described in Item G ("Other") of EXHIBIT A of this agreement.
- E. Deliverables Schedule:** A detailed description with schedule is on file with the Department of Agriculture, Markets & Food

A detailed description with schedule is on file with the Department of Agriculture, Markets & Food

Major Project Components:

On Farm Monitoring: 2015 Growing Season

Insect: Brown Marmorated Stink Bug scouting in the seacoast region with fifteen participating fruit and vegetable growers; setting traps, checking traps, collecting and recording data

Final Report: May 1, 2016

- F. Budget and Invoicing Instructions:** Campus will submit an invoice on regular Campus invoice form for \$23,089 at the time of Governor and Council approval. State will pay Campus within 30 days of receipt of the invoice. Any unused funds must be returned to the State after the project end date.

Budget Items	State Funding	Cost Sharing (if required)	Total
1. Salaries & Wages	10,133	0	10,133
2. Employee Fringe Benefits	1,831	0	1,831
3. Travel	3,360	0	3,360
4. Supplies and Services	3,000	0	3,000
5. Equipment	0	0	0
6. Facilities & Admin Costs	4,764	0	4,764
Subtotals	23,088	0	23,088
Total Project Costs:			23,088

- G. Other

A representative of the Department of Agriculture, Markets & Food reserves the right to attend seminars and audit any work performed by the grant recipient.

Attachment A: Project Proposal - "2015 Trapping Program for Brown Marmorated Stink Bug in NH"

I. Itemized Budget

Expense Account

Professional Time: George Hamilton, Extension Field Specialist

Fiscal Year 2015/2016 \$3,413

Benefits \$1,314

Additional Labor: 60 days @ 8 hours /day

@ \$14.00/hr. \$6,720

Associated fringe benefit at \$ 518

Mileage: 100 miles/day @ 60 days @ \$0.56 /mile \$3,360

Supplies \$3,000

Subtotal \$18,325

Indirect costs at 26% \$4,764

Total \$23,089

Professional Time:

George Hamilton, University of New Hampshire Cooperative Extension (UNH CE) - Field Specialist, is the primary person conducting the project and will be managing the finances of the grant. All recommendations that are given to the farmers will be approved through the primary person conducting the project and may be delivered through the IPM scouts hired for the project. The primary person conducting the project will make follow-up farm visits when problems occur with the IPM scouting during the growing season.

Benefits Rate(s):

The Employee Benefit Rates are based on UNH's most current Rate Agreement with the U. S. Department of Health and Human Services, as required under OMB Circular A-21. A copy of the Rate Agreement is provided annually to the NH Department of Administrative Services. The full Employee Benefits rate applies to salaries and wages, except for hourly and college work study wages, graduate student salaries, and faculty summer salaries. The partial rate applies to non-student hourly wages, FICA-eligible graduate student pay, faculty summer salaries, and other exceptions to faculty and staff contract pay. The post-doctoral research rate applies to all postdoctoral staff.

Additional Labor:

IPM Scouts for Insect Monitoring and Scouting .

One IPM scout will be hired for Brown Marmorated Stink Bug (BMSB) insect monitoring and scouting from May through September in the seacoast region of New Hampshire. The scout will be offered a 60 day position. The IPM scout with participating growers, will set-up traps, check the traps, and collect and record data throughout the 2015 growing season. The scout will collect traps at the end of the season, clean and inventory the good traps and dispose of traps that are no longer usable. The scout will collect the end of season grower surveys.

Mileage:

Over the previous seven years, the IPM scouts work on IPM projects averaged approximately 100 miles per day conducting the weekly farm visits for checking traps and monitoring crops. The total mileage is based on the 60 days additional labor (IPM scout).

Supplies:

Funds will be used for purchasing traps, trap supplies (i.e. poles, clips, strings, stakes, etc.), insect pheromone lures or attractants, and paper, ink, ink cartridges, and printing for forms used by the IPM scouts.

Indirect costs:



Facilities and Administrative Costs Rate: The Facilities and Administrative Cost Rate is based on UNH's most current Rate Agreement with the U. S. Department of Health and Human Services, as required under OMB Circular A-21, unless capped by the State of New Hampshire, RFP or Federal Sponsor. A copy of the Rate Agreement is provided to the NH Department of Administrative Services when rates change.

## II. Project Description

The population of Brown Marmorated Stink Bug (BMSB) will be monitored through trapping on a minimum of 15 fruit and vegetable farms weekly throughout the summer of 2015.

## III. Project Objectives

### 1. IPM

- Determine if BMSB is feeding on fruit and vegetables in New Hampshire.
- Teach fruit and vegetable growers to trap BSMB using 4 foot tall pyramid trap with an attractant lure.
- BMSB population data will yield information on seasonal activity and relative abundance of the insect, which is necessary for development of an IPM strategy.

## IV. Economic and Environmental Impact

The brown marmorated stink bug (BMSB) , *Halyomorpha halys*, is an invasive stink bug native to Japan, Korea, China, and Taiwan, which is now well-established throughout the mid-Atlantic region of the United States.

BMSB is a polyphagous species, meaning it can feed on a wide range of hosts, therefore BMSB is a pest of many crops where it is established. Host crops include tree fruit, vegetables, shade trees, and leguminous crops. In 2010, populations of this invasive species increased dramatically, causing widespread injury to many crops throughout the mid-Atlantic region. Tree fruit, in particular, was hit hard with some growers losing entire crops of stone fruit. Among apple growers, losses were totaled in excess of \$37 million in the region. In several Mid-Atlantic States, BMSB is now the most costly pest for peach and apple growers to manage.

Within the United States, native stink bugs generally have been classified as secondary pests of tree fruit and have been successfully managed with broad-spectrum insecticide applications typically directed at other key pests. When BMSB populations increased dramatically, this led to devastating levels of fruit injury and BMSB quickly replaced pests such as codling moth and oriental fruit moth as the key pest driving management decisions in the mid-Atlantic region of the United States. Because BMSB is a newly established invasive species, management programs for this pest are still being developed.

BMSB is not known to have caused any damage on fruit and vegetable farms in New Hampshire thus far. However, in 2014, significant damage was documented on fruit and vegetable farms in Massachusetts and Connecticut. By monitoring for it now, UNH CE will be able to inform farmers when it begins to arrive in their regions, and hopefully help them prepare to manage the pest using the least amount of pesticide. Work is currently being done by researchers at Mid-Atlantic States and New York to help farmers learn which pesticides are most effective, along with determining if there are any cultural or biological options effective for controlling this pest.

BMSB was first found in New Hampshire in 2010. Based on the pattern of this insects's spread, entomologists expect BMSB may begin feeding on New Hampshire crops within the next five years. Currently, BMSB has been confirmed in 20 NH municipalities including Barrington, Brookline, Chichester, Concord, Dover, Durham, Exeter, Greenland, Keene, Lebanon, Londonderry, Manchester, Merrimack, Milford, Nashua, Newington, Newport, Portsmouth, Rochester and Stratham.

V. How will your goals be accomplished?

- An IPM scout will be hired with NHDAM&F – IPM Grant funds to conduct on-farm monitoring and scouting for BMSB in the seacoast region.
- An IPM scout will monitor for BMSB on up to fifteen New Hampshire farms weekly.
- BMSB is best monitored using the 4 foot tall pyramid trap with an attractant lure. The lures are changed according to recommendations from the manufacturer.
- The traps will be checked weekly throughout the 2015 growing season from the end of May through the beginning of September.
- Dr. Alan Eaton, UNH CE IPM Coordinator and Extension Entomologist, will determine the need for special news releases, including the Weekly Market Bulletin, on serious BMSB outbreaks.
- At the end of the season, participating growers will complete a survey about the project.

VI. Sampling Methods:

1. IPM Component

- On-farm monitoring for BMSB will be conducted during the 2015 growing season on a minimum of fifteen operations in New Hampshire with UNH CE personnel assisting.
- Weekly trap counts will be reported to participating growers, who will be encouraged to learn to trap BMSB on their own.
- Any lures or baits used in the trap will be changed according to manufacturer recommendations.
- Traps will be moved according to crop conditions and maturity.
- Depending on how the traps are used in the field, material breakdown of the traps during growing season, and storage of the traps, traps may have a life of two or more years.

VII. How will your data be evaluated?

- At the end of the season, participating growers will complete a program evaluation survey which will be reviewed by the UNH CE IPM Coordinator and/or other UNH CE personnel.
- Based on the monitoring counts collected during the season, UNH CE can decide if additional educational programming needs to be developed for fruit and vegetable growers/farmers in the state.

VIII. Explain how the results of your project will be shared/publicized.

All published literature (papers, presentations, publications, advertisements, etc.) must contain a statement attributing funding to the New Hampshire Department of Agriculture, Markets and Food IPM Grant Program. Publications must be submitted with the final report.

- A weekly visit to each grower will be made to monitor trap counts.
- Updates on BMSB populations will be presented at twilight meetings throughout the growing season.
- Pending agreement by participating growers, trap catches will be posted on UNHCE's website.
- If there are any major BMSB insect outbreaks, alerts will go to various media sources, including the Weekly Market Bulletin.
- A power point presentation on the results of this project will be developed and presented to fruit and vegetable growers at a variety of educational workshops and conferences.

IX. Detail how other groups may adopt some of the information you learn or develop:

- All outreach materials (presentations, fact sheets, and alerts sent to media) will be made available by request.
- UNH CE specialists will give presentations on this topic to groups who request it.



## 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 .