

INTEGRATED PEST MANAGEMENT

Insights

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Brown Marmorated Stink Bugs: When You Go Inside to Escape the Autumn Chill, They're Not Far Behind

By Marcia Anderson, PhD, LTE, U.S. EPA

As cooler weather approaches, many pests try to find their way into warmer buildings, such as schools, barns, and homes. Stink bugs—including the brown marmorated stink bug (BMSB)—are no exception.

Outdoors in early autumn, stink bugs can be found hanging out on screens and on the bark of certain trees. The fall equinox—on or around September 22—sets off the fall stink bug migration.

How Did BMSB Arrive in the U.S.?

Accidentally imported from Asia into the United States, BMSB was first observed in Allentown, Pennsylvania, in 1998 (Jacobs, S., 2010).

With few natural predators in North America, BMSB has become widely recognized as a significant threat to agriculture, capable of causing catastrophic damage to certain crops. And research to control the pest and limit its effects is ongoing.

But BMSB can also be a challenging nuisance pest in residential settings, especially as the colder seasons set in.

How and Why Do They Choose Their Overwintering Sites?

An important component of managing many pests is to learn their habits and habitats and use that knowledge against them. BMSB is no exception.

According to Tracy Leskey of the USDA Agricultural Research Service, who conducted an “elevation trends for dispersal” study, it turns out that they like higher elevations. Then they seek out specific characteristics of buildings or homes.



Adult brown marmorated stink bug. Photo: Hectonichus, CC BY-SA 4.0.

Why Would They Choose My Home over the House Down the Street?

BMSBs seem to prefer darker house colors; however, they will still land on white houses, but not as often and not in comparable numbers. Next, they favor natural materials, such as wood, stone, or brick, as opposed to vinyl siding. The bugs like the north and east sides of buildings because they are typically cooler and damper.

Stink bugs can easily find cracks and crevices in foundations and gaps around window frames, soffits, and openings where pipes or wires enter the building. The bugs flatten their little bodies and squeeze through tiny openings, just letting themselves into any building they find attractive.

Once inside, they migrate toward tight, dry, concealed locations, like attic spaces, knee walls, and unheated portions of the attic.

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BMSB

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If they move into your living spaces, they are often looking for moisture, such as potted plants, pet water bowls, bathrooms, and kitchens. Also, if you find one stink bug inside, chances are you will find more not too far away, as stink bugs are typically found in aggregations. Researchers have also found that the weaker bugs become active first as they break from their hibernation.

The stink bugs seem to prefer darker house colors, natural materials, and the north and east sides of buildings, which are typically cooler and damper.

Stink bugs originally got their name from the rotting smell they give off when threatened or crushed. Since nobody wants their home to smell like rotting food, it's important to have a stink bug control plan in place if you begin noticing them around your home. If you step on one or crush it, you will quickly understand where it got its name.

A Regrettable—and Unforgettable—Holiday Encounter

My own stink bug encounter began just prior to the holidays, when my husband and son went on their annual Christmas tree hunt. They came home with a lovely tree that was home to our lights, ornaments, and garlands, and filled our home with the fresh scent of spruce.

Christmas came and went, and while taking off the lights and ornaments, I found shield-shaped bugs crawling out from the trunk along the branches. For the next four months, my house was overrun with the most putrid-smelling bugs that I have ever encountered.

Delayed Effects of Temperature and Food Availability

When we brought the tree into the house from the cold outdoors, the stink bugs began to wake from their winter slumber. As long as the tree was fresh, the stink bugs blissfully drank its sap. However, as the tree dried, the sap was no longer available, so the stink bugs began to explore the house looking for another meal.

They targeted the bathrooms and the kitchen, which have a ready water source, and any room with houseplants. They even swam in the dog's water dish. All winter long, I battled stink bugs. They made the vacuum smell and the dog stank. I soon found the easiest way to get rid of them was to give them an eternal swim (flush) down the porcelain whirlpool.

Avoiding a Similar Experience in Your Home

If you are selecting a fresh-cut tree, bring a strong flashlight. Check the trunk carefully and the undersides of the branches for the characteristically brown, shield-shaped bugs.

If you squeeze them, you will quickly learn how they got their name. Better advice: If you find them, look for a different tree.



Adult stink bugs. Photo: Susan Ellis, Bugwood.org.

Want to Avoid a Winter-Long Battle?

Even if you take steps to avoid unknowingly bringing stink bugs into your home, they will still be looking for overwintering sites and exploiting the aforementioned structural vulnerabilities to gain access.

Be pest wise. Follow an integrated pest management (IPM) action plan.

Inspection, detection, exclusion, sanitation, and maintenance are a few of the key components of IPM, a smart, sensible, and sustainable approach to pest control. Often, it takes detective work and ingenuity to discover how and where pests are entering your home.

How to Prevent Sharing Your Home with These Rancid-Smelling Pests

First, Work to Keep Them Out

Combat them before they get in by practicing good exclusion.

The bugs flatten their bodies and squeeze through windows, cracks, or other openings within the walls.

Inspection, detection, exclusion, sanitation, and maintenance are a few of the key components of IPM. Often, it takes detective work and ingenuity to discover how and where pests are entering your home.

Make sure all your window screens fit securely and tightly, vents are screened, and door and window frames have no gaps. Removal of window air conditioners is important, as numerous BMSBs will enter this way. Sealing around baseboards and areas where cables and wires enter your building will help keep stink bugs out. Expandable foam caulk can be used for larger gaps. Check under doors to ensure door sweeps are in good condition and do not leave any gaps.

Recipients of Regional IPM Centers DEIA Funding

In late 2023, the regional integrated pest management (IPM) centers released several diversity-focused funding opportunities. The goal was to make diversity, equity, inclusion, and accessibility (DEIA) both essential and commonplace within the IPM community.

This opportunity was collaboratively promoted by all four centers to be available on a national level, not limited to any single region, and applications were accepted until mid-2024.

Funding was awarded to eleven projects across the U.S. that address IPM needs of underrepresented stakeholders, distributed across two parts of the program: *equity and accessibility projects* and *mini-grant projects*.

Equity and Accessibility Projects



Integrated Pest Management of Irrigation Ponds for Beginning Farmers

Victoria Wallace, University of Connecticut

Aims to address the critical issue of irrigation-pond management for beginning farmers by

developing and implementing an IPM-focused educational program. By providing practical knowledge and support, the project seeks to improve pond health, reduce reliance on chemical inputs, and enhance the overall resilience of beginning farming operations.

In homes, other major points of entry are fireplaces, firewood, and chimneys. Close your flue when the fireplace is not in use.

Second, Deal with Stink Bugs That Do Gain Entry

If small numbers occur indoors, they can be removed either by hand or by using a shop-grade vacuum. Vacuum cleaners can sweep up both live and dead stink bugs. However, be warned: this use may permanently infuse the stink into your vacuum.

Be sure to remove the dead bugs, as the rotting carrion smell will attract even more stink bugs and other insects.

For attic infestations, have a pest management professional treat the attic spaces. Diatomaceous earth can be used for limited stink bug control outdoors, in basements and attics, and around foundations.

During my own experience around the holidays, I found that placing a large bowl or turkey pan of water mixed with dish-washing liquid on the floor of my kitchen will attract and drown the bugs. For even greater efficacy, place a desk lamp near the bowl and turn it on. You may wish to place the dead bugs in zip-top bags before discarding them to prevent the stink from permeating your garbage area.



Developing and Sharing Approaches to DEIA Improvements for Invasive Species Outreach

Michelle Beloskur, Morton Arboretum's Midwest Invasive Plant Network (MIPN)

Aims to enhance the accessibility and inclusivity of invasive species information and resources for a diverse audience. Through DEIA training, needs assessments, and material evaluations, MIPN will develop a comprehensive approach to improving outreach efforts and create a standardized accessibility framework for the organization and its partners.



Heritage Farmers in Kentucky: Making Connections with Underserved Audiences

Nicole Gauthier, University of Kentucky

Aims to address the unique challenges faced by historically underserved populations (HUPs) in Kentucky's agricultural sector by developing culturally sensitive IPM resources and building trust within these communities. The project focuses on understanding the needs of HUP specialty crop farmers, developing tailored IPM recommendations, and establishing strong partnerships to support long-term engagement.

Managing BMSB as a Nuisance Pest

Although BMSB remains a significant agricultural pest, the good news is that it poses no substantial risk to structures or people. However, it is a horrid nuisance in residential settings.

Fortunately, homeowners can help manage and limit the problem by using some key IPM techniques. This includes understanding what attracts BMSBs, how they get in, and what they look for once they're inside your home. This information can then be used as the basis for strategies against the invading pests.

Sources and Further Reading

Penn State Extension – Brown Marmorated Stink Bug: extension.psu.edu/brown-marmorated-stink-bug (Steve Jacobs)

StopBMSB.org – state-by-state: www.stopbmsb.org/where-is-bmsb/state-by-state/ (website maintained by the Northeastern IPM Center)

Rutgers New Jersey Agricultural Experiment Station – Monitoring for the Brown Marmorated Stink Bug: njaes.rutgers.edu/stink-bug/



Healthy Urban Gardening

Brent Crain, Michigan State University

Aims to bridge the gap in IPM education for beginner, urban, and historically marginalized gardeners through a collaborative partnership with Young People of Purpose (YPOP). The project will develop and pilot a three-session healthy urban gardening course focused on IPM principles, targeting Black communities in Jackson, MI, with a goal to create a comprehensive curriculum package for broader dissemination throughout Michigan.



IPM Beekeeping Education for Incarcerated Persons

Katie Lee, University of Minnesota Bee Squad

Aims to enhance beekeeping education for incarcerated individuals by incorporating IPM principles into their existing program. By providing hands-on training and IPM knowledge, the project seeks to improve bee health, reduce pesticide use, and empower incarcerated individuals with valuable skills for potential post-release employment.



Innovative Community Approaches to IPM in Low-Access Areas

Shaun Martinz, Vista Ridge Montana

Aims to address food insecurity and promote sustainable agriculture in low-access communities through a community-based IPM program. By focusing on education, collaboration, and practical implementation, the project seeks to reduce pesticide use, increase crop yields, and empower community members to build resilient food systems.



Development of a Novel “Trap Solution” Using Extracts from Mustard Trap Crop Varieties for the Management of the Harlequin Bug on Crucifers

Beatrice Dingha, North Carolina A&T State University

Aims to develop a sustainable and environmentally friendly solution to the harlequin bug infestation affecting collard green production. By exploring the potential of mustard plant extracts as a trap solution, the project seeks to reduce reliance on harmful insecticides and protect the livelihoods of small-scale farmers.



IPM and Training Opportunities at the Utah State Correctional Facility

Michele Rehbein, Salt Lake City Mosquito Abatement District (SLCMAD)

SLCMAD proposes a comprehensive IPM program within the Utah State Correctional Facility with a goal of addressing the significant mosquito population on the facility’s grounds while providing inmates and staff with valuable training and skill-development opportunities. The project involves IPM education, pesticide applicator licensing, and the rearing of least chub fish as a biological control agent for mosquitoes.

Mini-Grant Projects

Three of the projects were funded under the DEIA mini-grant portion of the program, with a goal of addressing underserved communities through targeted education and resources.

Expanding Access to Cooperative Extension Services for Specialty Crop Growers

Gwen Funk and Kathi Mecham, University of Missouri Extension

Focuses on Amish farmers in Missouri, providing on-farm consultations to improve pest management, water quality, and nutrient management practices.

Enhancing DEIA in IPM through Targeted Workshops for Spanish-Speaking Farmers and Farm Employees in the Hudson Valley Region, New York

Raul Eliazar Lemus Garza, Cornell University

Aims to enhance IPM knowledge and adoption among Spanish-speaking farmers and farm employees in the Hudson Valley of New York through targeted workshops.

Farming Without Borders: Empowering Urban Refugee and Immigrant Farmers Through Language-Appropriate Crop and Pest Management Tools

Fernanda Krupek, The Ohio State University

Focuses on Bhutanese refugee and immigrant farmers in Ohio, developing language-appropriate IPM resources and training materials.

Northeastern IPM Center Announces Request for Applications for 2025 IPM Partnership Grants

The Northeastern Integrated Pest Management (IPM) Center has opened its annual request for applications (RFA) for projects seeking funding through the IPM Partnership Grants Program in 2025, with an application deadline of November 14, 2024.

Please note: The Center's RFA was revised on October 3, 2024—superseding some initial announcements—as follows:

- The revised RFA is soliciting proposals only for six-month projects starting March 1, 2025, and ending by August 31, 2025.
- The deadline for proposal submissions was moved to November 14, 2024.
- The informational webinar, originally scheduled for October 1, 2024, was postponed until October 9 (recording available, see below).

IPM Partnership Grants Program

The IPM Partnership Grants Program supports three project types: *IPM Applied Research*, *IPM Working Groups*, and *IPM Communications*.

Up to \$160,000 in total will be available for 2025, generally with a maximum of \$40,000 per award, although projects that meet the criteria for a diversity-focused competitive preference priority may apply for up to an additional \$10,000.

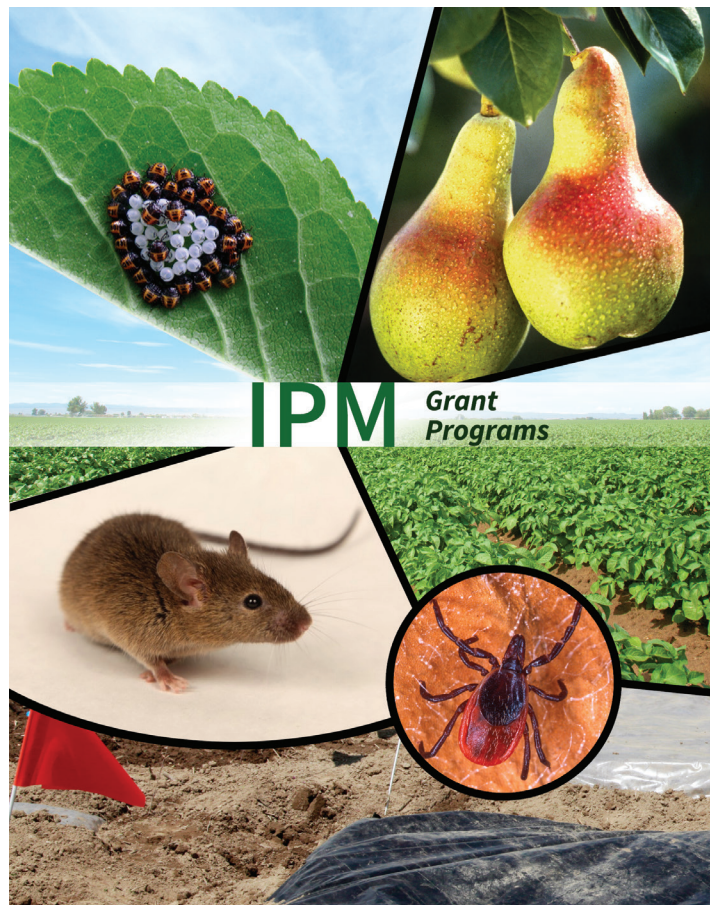
Funded projects are expected to contribute significantly to the adoption and/or development of IPM in one or more of the Center's Signature Programs while addressing one or more of the Center's cross-cutting issues (www.northeastipm.org/about-us/signature-programs/).

There is a 6-month time limit on funded projects.

The Center's grants programs are supported by the National Institute of Food and Agriculture at the United States Department of Agriculture (USDA-NIFA).

Informational Webinar

The Center hosted an informational webinar for prospective applicants on October 9, 2024. The recording is available at neipmc.org/go/rfawebinar2024.



Learn More or Apply

- IPM Partnership Grants Program: neipmc.org/go/partnership
- Northeastern IPM Center Signature Programs and cross-cutting issues: www.northeastipm.org/about-us/signature-programs/

Funding Available in Other Regions

The other regional IPM centers have also opened their RFAs with the following submission deadlines:

- **North Central IPM Center:** Friday, November 22 (www.ncipmc.org/funds-available/)
- **Southern IPM Center:** Friday, November 22 (southernipm.org/grants/programs/southern-ipm-grants-2025/)
- **Western IPM Center:** Friday, December 6 (westernipm.org/index.cfm/center-grants/)

Upcoming Northeastern IPM Center Events

The Northeastern Integrated Pest Management (IPM) Center continues its online programming this fall with the last *IPM Toolbox* webinar currently scheduled for the season and the Northeast IPM Research Update Conference.

Both are free and open to the public.

IPM Toolbox Webinar: Bee Breeding and IPM for Better Pollinator Health

November 20, 2024, 11:00 a.m. Eastern

Presenter: **Hongmei Li-Byarlay**, associate professor, Central State University

This presentation will focus on recently published and current research on the genetics and breeding of mite-resistant stocks in honey bees, and on a recent study using a sustainable method to manage varroa mites in bee hives.

Visit neipmc.org/go/pXcE for more information or to register.

About the Center's Webinars

The Center's *IPM Toolbox* webinar series invites experts for hour-long conversations to present—and engage the audience in dialogue—about an IPM practice, method, or effort. For more information, including recordings of previous webinars, visit neipmc.org/go/ipmtoolbox.

Some *IPM Toolbox* webinars are part of the Center's *Diversity, Equity, Inclusion, and Justice in IPM* initiative, which also includes additional presentations and panel discussions. For more information, visit neipmc.org/go/yBmD.

Northeast IPM Research Update Conference

December 10, 2024, 10:30 a.m. – noon Eastern

This online event, hosted by the Northeastern IPM Center, will feature updates from active projects throughout the Northeast funded by one of several sources:

- The Center's own IPM Partnership Grants Program
- The Northeast Sustainable Agriculture Research and Education (NE SARE) Program
- USDA-NIFA's Applied Research and Development Program (ARDP) and Extension Implementation Program (EIP)

This rapid-style conference will feature five-minute pre-recorded presentations in which the speakers will discuss one or two highlights from their projects. Live Q&A sessions are interspersed throughout.

The purpose of the conference is to increase collaboration and awareness about current IPM-related research and extension in the Northeast in a fun and engaging way. **Anyone with an internet connection is invited to join.** For more information or to register, visit neipmc.org/go/PHkh.

Save the Date: 11th International IPM Symposium

First discounted registration tier closes November 22; call for posters closes November 8

Save the date for the *11th International IPM Symposium: Pest Management in Changing Environments*, to be held March 3–6, 2025, at Paradise Point in San Diego, California.



The symposium has traditionally been the premier global event for presenting and learning about the latest research and strategies for effectively managing pests. Participants have typically included academics (including research, extension, and teaching), private and government scientists, industry professionals, policymakers, and students, among others.

Ismahane Elouafi has been confirmed as keynote speaker. Elouafi is executive managing director of CGIAR, a global agricultural and food systems research network.

There are two tiers of discounted early registration available. **The deadline for super early bird registration is**

November 22, 2024. An ongoing webinar series has been scheduled leading up to the event, with recordings of previous webinars available to view online. **A call for posters is open until November 8, 2024.**

The symposium will feature a broad range of sessions, exhibits, field trips, and award presentations. The vision for the 11th International IPM Symposium is to bring together top IPM professionals from industry and academia in agriculture, public health, built environments, landscape, and forest/conservation.

For more information, to register for the symposium or view the webinars, or to sign up for email updates, visit ipmsymposium.org/2025/.

Credits

IPM Insights: Deborah G. Grantham, Director; Mike Webb, Editor; Kevin Judd, Designer. **Northeastern IPM Center:** Deborah G. Grantham, Jerrie Haines, Jana Hexter, Kevin Judd, David Lane, Susannah Reese, Mike Webb.



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