

US EPA ARCHIVE DOCUMENT



PESPWire

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US EPA ARCHIVE DOCUMENT

U.S. Green Building Council *Opportunities for IPM Partnership*

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US EPA Region 5

EPA Region 5 has cultivated a successful relationship to promote Integrated Pest Management (IPM) with the Illinois chapter of the U. S. Green Building Council (USGBC) , and plans to expand it to other chapters in the coming year. Partnerships with other programs and organization are crucial to EPA's success in advancing School IPM. IPM is an inherently multi-disciplinary approach, and to be effective we need to engage others who have a stake in the issue, whether that be about factors that go into a pest management scenario or in the results from it. In fact, partnerships are one of four strategic approaches EPA uses to achieve our goal of IPM adoption in schools nationwide.

Background

USGBC is a membership organization, founded in 1993, and based in Washington, DC. Membership includes architects, engineers, designers, builders, suppliers, and their firms. It is also open to planners, policy makers, and citizens interested in sustainability. USGBC has 72 chapters—with at least one in every state. USGBC is probably best known for its [Leadership in Energy and Environmental Design](#) (LEED) certification program. In LEED, an independent third party certifies the sustainability features in buildings—both existing and newly constructed—and awards points that lead to Silver, Gold, or Platinum designations. LEED practitioners can also earn accreditation at several levels, which require continuing education units to maintain.

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New Biopesticide Combats Invasive Sea Lamprey

With their snake-like shape and fluttery dorsal fins, sea lampreys look like a slightly creepy but seemingly innocuous reptile-fish hybrid. Their harmless appearance belies their parasitic nature. In reality, sea lamprey are a predatory species that has been wreaking havoc on native U.S. fisheries, particularly in the Great Lakes region.



Sea lamprey
Photo: C. Krueger, Great Lakes Fishery Commission

Fortunately, a new biopesticide pheromone to combat invasive sea lamprey has just been registered by the U.S. EPA. The product will add a new, more environmentally benign option for sea lamprey control, as compared to convention pesticides.

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Have Questions on IPM in Schools?
Contact EPA's Center of Expertise for
School IPM!
school.ipm@epa.gov 844-EPA-SIPM
844-372-7476

U.S. Green Building Council

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USGBC also supports [The Center for Green Schools](#), which maintains a wide variety of resources for several audiences, and has adopted this inspiring vision statement - Every child in a green school within this generation.



Most USGBC chapters have green schools committees to help make this happen; EPA Region 5 participates in this committee within the Illinois Chapter.

Partnership

Partnerships of all kinds are exceptionally valuable in advancing IPM. They are opportunities to share resources and coordinate effort. They open a door to impact audiences to which we might not otherwise have access. In the case of Region 5's partnership with USGBC, EPA can get the IPM message to those who are planning, building, remodeling, re-commissioning or certifying schools. In this way, EPA can be in on the very ground floor and have a good chance of making a difference for those kids and their teachers.

Partnerships also take advantage of overlapping missions. While IPM is only a small part of LEED certification, the standard for IPM points is exactly what EPA wants to achieve in the school that is pursuing it. IPM also helps in achieving a contaminant-free structure. Green cleaning, moisture control, and good ventilation are all IPM tactics that promote a healthy indoor environment for learning.

When more people are involved in a practice such as IPM, and understand their respective roles in keeping a building healthy, the more likely it is that the practice remains in place with staff turnover and when the initial promotion ends.

Participation

In Illinois, the USGBC has a handful of signature events, one of which is its biennial Green Schools Symposium. Hosted by a school that gets to showcase its facility, the symposium is a one-day event for architects, suppliers, teachers, administrators, policy makers, interested citizens, and students. The program typically has one or two plenary sessions and a series of breakout sessions in several interest areas. The event is an excellent opportunity for education, outreach and networking.

Region 5 typically provides information on all our healthy schools programs; presents breakout sessions on school IPM and asthma/indoor air quality; and follows-up with attendees who are interested in more information.

One of the foremost USGBC programs is continuing education—providing training events for LEED-accredited professionals to maintain their credentials. Region 5 developed and proposed an educational workshop on IPM, green cleaning, and chemicals management in a one-hour format entitled “Resources for Healthy Learning Environments.”

The workshop was offered at several credentialing workshops, both in person and via webinar. The workshop included rationale for healthy learning environments (including academic performance), the ways to earn the LEED certification points for IPM, and how to achieve compliance with Illinois law. The workshops equipped these consultants to include IPM in their plans for their client school districts.

Participating in USGBC events allows EPA to influence the movement to build and remodel schools, especially with communities that have sustainability in mind. Many schools also have periodic mandatory life safety inspections that result in building upgrades. On average, a school building generally gets a significant remodel/upgrade every 30 years. If we can include some sustainable pest prevention measures into regular school remodels/upgrades, we are successful.

Lessons Learned

Region 5 found that USGBC audiences were uniformly interested and receptive:

“Thanks, we need to know these things and don't hear about them often.”

“Would you offer this in a webinar for a group of my school clients?”

“I am going to mention this at my child's school.”

“We're building a new school in . . . Can you give us an idea about what needs to be in place when it opens?”

Region 5 learned that IPM is best presented in conjunction with other strategies that promote healthy learning environments, such as green cleaning, indoor air quality, energy efficiency, and overall sustainability.

Region 5's partnership with USGBC requires ongoing participation with interested stakeholders to ensure sustainability, as IPM is a topic many consider to be peripheral in the building industry. The partnership takes advantage of the growing momentum among school districts pursuing LEED certification or other green school programs, so that IPM is integral in their efforts to build and maintain sustainable facilities.

Disclaimer: This article is not an endorsement of the USGBC, the LEED certification program, or The Center for Green Schools. There are other comparable organizations and green building certification programs; this article is merely descriptive of our recent work with USGBC.

Combating Invasive Sea Lamprey

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Since the 1950s, sea lamprey have caused population crashes of native fish including lake trout, salmon, steelhead and whitefish. They parasitize other fish by sucking their blood and other body fluids, and a single sea lamprey can kill more than 40 pounds of fish during its life. In order to protect the aquatic ecosystem and economic vitality of the area, control of sea lamprey is of critical importance to the Great Lakes region.

The Great Lakes Fishery Commission website notes that sea lampreys are native to the Atlantic Ocean, where co-evolution with other fish means the species does not typically kill hosts. As mentioned on the U.S. Fish and Wildlife Service's Sea Lamprey Control Program website, the sea lamprey "existed throughout the St. Lawrence Waterway and Lake Erie but was prevented from moving up into the Upper Great Lakes by Niagara Falls.



Sea lamprey mouth
Photo: U.S. Fish and Wildlife Service

The canal system used to provide boat transport through the eastern states and ultimately, the construction of the Welland Canal in the late 1800s to provide a shipping route bypass around Niagara Falls, allowed sea lamprey to gain access to the Great Lakes. By the mid-1900s sea lamprey had colonized each of the Upper Great Lakes."

As new tools to help control the sea lamprey, EPA has registered two new biopesticide products that use male sea lamprey mating pheromone. The products are used to attract and trap breeding female sea lampreys during their spawning season.

The pheromone is expected to be an important tool in protecting the Great Lakes ecosystem and fisheries from this predatory fish. The registrant for these products is the U.S. Fish and Wildlife Service, the agency charged with controlling the spread of sea lampreys.

Because of the international nature of the sea lamprey incursion, the U.S. and Canada have jointly registered these two products. The U.S. Fish and Wildlife Service and Fisheries and Oceans Canada, the governmental agencies charged with controlling this pest, will apply the products in a coordinated effort.

Presently, over 40 registered pheromone active ingredients are safely used to control hundreds of pest insects. That targeted use of these pheromone products has been an important tool in agricultural pest control over the last two decades, successfully reducing the use of more toxic insecticides. However, **this product will be the first vertebrate pheromone ever registered.**

The registration of the male sea lamprey mating pheromone is an excellent example of a novel biopesticide solution that has been developed to fight a pressing pest problem. With new sea lamprey management solutions, and the continued work of dedicated organizations like the U.S. Fish and Wildlife Service and the Great Lakes Fishery Commission, the wrath of the predatory sea lamprey will, hopefully, be kept at bay – thus paving the way for healthier aquatic ecosystems everywhere.

Additional links and Information

More information on Male Sea Lamprey Mating Pheromone registration: www.regulations.gov in Docket # EPA HQ-OPP-2013-0538.

Great Lakes Fishery Commission: www.glfsc.org/sealamp

U.S. Fish and Wildlife Service: www.fws.gov/midwest/fisheries/sea-lamprey.html

U.S. EPA - Biopesticides: www.epa.gov/pesticides/biopesticides

Quick Facts about Sea Lamprey

- Sea lampreys (*Petromyzon marinus*) are parasitic fish native to the Atlantic Ocean.
- The species has remained largely unchanged for more than 340 million years and have survived through at least four major extinction events.
- Sea lampreys do not have jaws or other bony structures. Rather, their skeleton is made of cartilage.
- While sea lampreys resemble eels, the two are not related.
- The mouth of a sea lamprey is comprised of a large oral sucking disk filled with sharp, horn-shaped teeth that surround a razorsharp tongue.



Salmon injured by sea lamprey
Photo: Great Lakes Fishery Commission

Source: Great Lakes Fishery Commission website www.glfsc.org/sealamp

SCOPE: A New Scientific Coalition on Pest Exclusion

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Introduction

In the [Fall 2015](#) issue of EPA's PESPWire, I discussed how urban pest management is intuitively tied to the principles of urban ecology. I stressed that as part of urban ecology, pest management is comprised of three critical elements: 1) maintaining healthy urban ecosystems (e.g., refuse stream management, infrastructural maintenance, community involvement, etc.); 2) formal structural pest exclusion designs for buildings to minimize pest entry and direct human interactions, and 3) the use of mechanical and chemical interactions to supplement Nos. 1 and 2.

My specific focus in this follow up article is how pest exclusion, despite it being one of the critical elements of urban IPM, is often an under-emphasized and overlooked part of managing even the most common urban pests. This, however, may be changing. I would like to introduce a relatively new drive and emphasis in the science of pest exclusion; the movement called SCOPE.

SCOPE is Born

In late 2012, a group of scientists (see list at the end of this article) began revisiting and discussing how pest exclusion still remains both under-addressed and under-studied as an urban IPM component. These scientists formed the Scientific Coalition on Pest Exclusion (SCOPE), an effort to better support and promote pest exclusion research and extension regarding the use of exclusion materials and methods in the built environment.

The essential premise of SCOPE is to evaluate approaches, tools, methods and the impediments associated with pest exclusion, beginning with a pest's initial encounter of a structure, as well as their subsequent increase as they spread from the point of entry to any of the many additional points inside that structure. The ultimate goal is to reach true sustainability in the control and elimination of chronic urban pest populations, including cockroaches, bedbugs, rats, mice, and ants. By profiling pest entry and subsequent interior dispersal, this ultimately assists in suppressing the pests' ability to create founder populations in other (i.e., un-infested) areas of buildings.

Goals

Compared to the many other aspects of urban pest management, the scientific dimensions of pest exclusion remain poorly understood. Consequently, three primary goals for SCOPE become obvious:

1. Identify, analyze and prioritize pest entry locations of residential and commercial buildings (e.g., homes, apartment buildings, restaurants, food plants, food and retail stores, office buildings, schools, etc.).
2. Develop exterior and interior exclusion inspection checklists for residential and commercial urban properties.
3. Characterize the pathways of urban pests inside structures to assist in understanding how urban pests travel within and between structures.

Pest Proofing Technology

For sure, there are additional concerns needing attention beyond the three goals listed above if urban IPM is to be considered truly holistic. To a large degree, part of the reason why pest exclusion via pest proofing has been underemphasized is because there are limited pest proofing materials and methods readily available.

Incredibly, only in 2015 did technology finally produce effective door sweeps that can deny even the most determined rodents from gaining entry at ground level. Similarly, new technology has just recently emerged that closes the astragal gap of double doors to urban rodents and the other urban pests that have essentially been sauntering through this gap ever since the double door was invented!



New technology has produced enhanced sweeps to eliminate the space between two double doors (called the astragal gap). If the bottom threshold of a double door is tight but the space between the doors is not, the doors remain, in effect, continuously open to pests.

While it's true that a range of caulks, foams, sealants, "plugs", and metal wools that assist in pest proofing have existed for decades, virtually nothing has been formally provided on the effectiveness of these materials, nor on any possible and perhaps more advanced replacements. For example, we don't know these materials' comparative efficacies, their site-specific longevities, their cost benefits ratios, and so on.

Even the common escutcheon plate and its specific use in urban pest management has eluded our attention. Are the current plumbing escutcheon plates the best means of also denying pests one of their most common and "favorite" travel routes and dispersal avenues? Relative to pest dispersal within buildings and between floors, using (or mis-using) an escutcheon plate is essentially the interior parallel to leaving the building's exterior doors wide open to allow pests unimpeded first entry.

What new technology is waiting to be discovered, developed and employed to supplement these elementary materials and methods?

Pest Exclusion Training

Most property owners do not understand the difference between weather-proofing and pest-proofing, whether it is a door, a wall or a window. What does it mean to say a building is “tight”? It has been my experience that a majority of professional builders do not fully understand an urban pest specialist’s perspective on “tight”. Conversely, many pest professionals are not adequately knowledgeable regarding the elementary components of building construction, plumbing trees, and residential and commercial door systems. Nor are many pest management professionals trained in the basics as to how to read and/or understand the basic floor plans and blue prints of buildings. Yet, these are often critical in any plan to strategize and access important pests such as termites, cockroaches, mice, rats, ants, flies and others for the true extermination of their populations inside buildings (vs. a monthly harvesting down of their most susceptible individuals).

Many in the building and pest control industries lag behind in understanding that plugging a hole in a wall to deny pest entry and travel is more complicated than stuffing the hole with a wad of steel wool, or that there is an important difference in using a caulk instead of a sealant that can be applied in a caulk gun. Worse, many still spray foam out of a can to close holes in walls and around pipes. This common practice is somewhat going backwards as a method for both short and long term pest-proofing. Within food production and food serving establishments, this foam practice is actually a detriment to food safety, since this “quick-repair” is relatively un-cleanable to microbials.

By the year 2050, 66% of the world’s population is expected to reside in cities. This means that there will be more buildings, more expansions and remodeling of older buildings, and more repairs to existing structures.

With this future in sight, perhaps it is time for collegiate entomology programs to offer full 4-year degrees in pest exclusion science. Why would such a degree be any less important than a degree in landscape management, energy sustainability or public health?

Or, at the very least, perhaps a 3-credit college course in pest-proofing as part of a curriculum in either (or both) urban entomology or the associated building engineering programs? In fact, isn’t it assumed that a professionally constructed building shouldn’t admit pests from the get-go?

Summary

So, how can we better link the pest management industry, property owners, new home buyers and the professional builders of the world to understand the materials, techniques and importance of proper pest exclusion for all city properties? After all, IPM by definition, is about integrating all of the above. Or, it certainly should be. Nowhere in the definition of integrated pest management does it state, or even imply, that pest proofing of structures is of less importance than any other component of the IPM model. Actually, pest exclusion through structural pest proofing is usually emphasized as one of the cornerstones of urban IPM. Yet, it sure doesn’t seem that way in practice.

What is more efficient, more cost-effective and more important than denying pests entry in the first place? This is particularly true in the case of important public health and food pests. Allowing entry of health pests into a building and then attempting to kill or capture them after the fact with pesticide sprays, baits, or traps actually defies the inherent premise of public health - being preventive! Even if we are successful in killing the pests once they are inside, haven’t we already granted full unimpeded entry into human-occupied dwellings to fleas, ticks, lice, mites and /or to perhaps any pathogenic viruses or bacteria they or their hitchhikers are carrying?

The point is, once any of these tiny bad boys are in, they are in, even if their larger insect or mammal hosts are now dead. Why is society so inclined, in general, to let them in when in many cases it is not so difficult to keep a majority of them out?

SCOPE Founders and Members:

The founders of SCOPE include urban pest management scientists and extension personnel from the University of Minnesota, Cornell University, the City of New Orleans Vector Control and a consultant from the private sector. SCOPE membership now includes several dozen participants representing academia, the food industry, logistics companies, private consultants, a structural materials pest exclusion manufacturer, several city municipalities, progressive pest management professionals and others.

For further information, visit www.pestexclusion.org or, you may contact any of these members:

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University of Florida Exceeds School IPM Implementation Goal

The University of Florida proposed in 2012 to utilize an EPA grant to form a consortium between the states of Florida, Georgia, and Alabama to advance the adoption of integrated pest management in schools. This project sought to start IPM programs directly impacting 200,000 students, to provide IPM training for schools and other interested parties, to complete best management practices (BMPs) for schools outsourcing pest control, and to share curriculum for continuing education credits (CEUs) with other coalitions. The project greatly exceeded its goals by implementing IPM in new districts and directly impacting over 407,000 students and nearly 50,000 staff in 585 schools across the three states. Between the new districts implementing IPM and the districts offered support through this project who were already implementing IPM, over one million children were impacted by this far-reaching project.



Training offered at Florida School Plant Manager's Association meetings in 2012 and 2013 reached staff representing 1,500 schools and close to 1 million students. More intensive training offered through [Pest Management University \(PMU\)](#) reached 32 staff representing 5 school districts and ~500,000 children. [BMPs](#) were completed and posted to University of Florida's [school IPM website](#), and curriculum for CEUs was shared with the states of Washington and Texas.

One of the many success stories from this project is found in the Orange County (Florida) Public Schools. Orange County, the 10th largest school district in the country with 255 schools and over 180,000 students, realized substantial benefits from implementing IPM. The University of Florida worked with the county to build institutional knowledge of IPM through PMU, site visits, and distance support. Through the implementation of IPM, the district's work orders for pest complaints declined from an average of 300 per year to 65. They also realized an annual cost savings of about \$250,000! While the district's IPM program suffered a temporary setback as they transitioned to outsourcing their pest management, the University of Florida is helping them get back on the IPM track. The university is assisting the new district personnel and the contracted service providers have attended a PMU training course.

University of Florida's project demonstrated the effectiveness collaboration and training key personnel has in implementing school IPM. The outcomes produced and lessons learned will continue to impact children's health in the region for years to come.

Sustaining Your IPM Program

Staff turnover presents challenges to schools in sustaining their IPM programs. Often, keeping a team intact is what maintains a program. School IPM programs are often formed because the district has a change agent to lead the charge. Once established, there are ways to ensure an IPM program's sustainability through staff turnover. One of the successful models for school IPM implementation is based on diffusion. In 1995, Everett Rodgers outlined how diffusion should be managed in his book, *Diffusion of Innovation*. In this model, the champions of an IPM program will lead an IPM/Safety Committee within the school/district. That committee helps formalize the program and serves to build consistency, leadership and continuity for maintaining the IPM program. If the lead of the committee moves on, the committee can sustain the program.

Other key steps that school districts can take to institutionalize school IPM to encourage sustainability include:

Have a Pesticide Safety and IPM Plan. The US EPA recommends that all school districts develop and update an annual pesticide safety and IPM plan that details the components of the school district policy, describes staff responsibilities, lists all approved products and methods by pest, and discusses monitoring and reporting processes for pest infestations, as well as, action levels for the use of pesticides. For more information, please see [EPA's Model Pesticide Safety and IPM Guidance Policy for School Districts](#).

Contract with IPM Certified Pest Management Service Providers. School districts that contract for pest management services should include IPM requirements in their bid specifications and contracts to ensure that the firm they hire will provide IPM-based services. The contracts should include IPM components such as pest identification, monitoring, action thresholds and specific/targeted pesticide applications and ongoing communication with the IPM/Safety Committee. The three current certification programs for pest management professionals include the National Pest Management Association's [Quality Pro Schools](#), IPM Institute of North America's [Green Shield Certified](#), and the Association of Bay Area Governments' [EcoWise Certified](#).

IPM Certification for Schools. Districts that maintain and sustain IPM programs often seek third-party certifications. One national program, [IPM Star](#), managed by the IPM Institute of North America, has been successful at recognizing many school districts for their IPM successes. It is a stringent, often costly process for districts to pursue, but they find that the recognition engenders long-term support for their IPM program.

Awards and Recognition. EPA is developing a program to provide recognition for school districts across the nation that are working towards or have achieved a level of success with their IPM programs. This [awards program](#) is expected to launch in 2016.

Rodgers, E.M. (1995). *Diffusion of Innovations*. (4th Ed.) New York: The Free Press

EPA News in Brief

EPA Launches Pesticide Worker Protection Dashboard

As part of our overall [efforts to increase protection for farmworkers](#) from pesticide exposure and increase transparency EPA recently launched a new [Pesticide Worker Protection Dashboard](#). This interactive tool provides charts and graphs presenting certain key enforcement and compliance information related to the Worker Protection Standard (WPS) program under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This effort reflects our ongoing commitment to make environmental data accessible and easy to use. The WPS dashboard presents information on the regulated community and answers questions like:

- how many facilities in the United States employ workers or handlers covered by the Worker Protection Standard;
- how many inspections are reported;
- how many violations have been found, and what enforcement actions have been taken by states, tribes and/or EPA.

This information will help allow the public and regulators to monitor the types of worker protection violations found in their state and in adjoining states so that they can adjust compliance assistance and education efforts or target inspections to increase compliance.

Greater compliance means better protection for agricultural workers and fewer pesticide exposure incidents among farmworkers and their family members. That means a healthier workforce, reductions in lost wages and medical bills, and fewer absences from work and school. The public will be able to see the number of operations and workers covered by the Worker Protection Standard, and see the types and numbers of responses by the state, territory, tribe or EPA. Most states, territories and several tribes have primary authority for compliance monitoring and enforcement against the use of pesticides in violation of the labeling requirements (this is commonly referred to as state primacy). It is important to note that the data may not reflect all compliance monitoring, inspections and enforcement activity within a state or tribe and that database will be updated.

EPA's final WPS will strengthen protection for farmworkers. The WPS is aimed at reducing the risk of pesticide poisoning and injury among agricultural workers and pesticide handlers. The WPS offers occupational protection to nearly 2 million agricultural workers (people involved in the production of agricultural plants such as picking crops) and pesticide handlers (people who mix, load, or apply crop pesticides) who work at farms, forests, nurseries and greenhouses.

You can access the WPS Dashboard at <https://echo.epa.gov/trends/comparative-maps-dashboards/state-pest-dashboard>

EPA Registers Three New Biopesticides

On November 3, 2015, EPA registered a new microbial end-use product, Helicovex, containing a new active ingredient, *Helicoverpa armigera* nucleopolyhedrovirus strain BV-0003, for agricultural use in greenhouses and field applications to control the corn earworm (*Helicoverpa zea*), tobacco budworm (*Helicoverpa virescens*), and African cotton bollworm (*Helicoverpa armigera*) on a wide variety of food and non-food crops. The active ingredient is an insect virus specific to target insect pests. The virus infects the larvae of these target insects. Helicovex may be applied by ground or aerial spray or by chemigation. In addition, there is a sub-label for control of the same insect pests on a subset of these food crops, flowers, and ornamentals in home gardens.

On December 1, 2015, EPA registered the new biochemical active ingredient choline chloride for use on all food commodities. A biopesticide, choline chloride is classified as a plant growth regulator. The scientific literature shows that choline chloride can confer beneficial effects to plants by increasing shoot height, leaf area, leaf ratio, chlorophyll content and root elongation. This first registered end-use product is to be applied as a foliar spray directly to the foliage of growing plants at very low concentrations with a maximum of four applications per season. The registrant, CP Bio, Inc., plans to offer their new product for the upcoming growing season.

On December 2, 2015, EPA registered the microbial active ingredient *C Spodoptera exigua* multinucleopolyhedrovirus strain BV-0004, a virus specific to the beet armyworm. This new active ingredient is registered for use on a wide variety of fruits, vegetables, and flowers in home gardens and farms to control beet armyworm. The food uses fall within the scope of the existing exemption from tolerance established at 40 CFR Part §180.1118) for occlusion bodies of the nuclear polyhedrovirus of *Spodoptera exigua*. Spexit, the end-use product, has the potential to replace many conventional insecticides such as malathion and clorpyrifos.

Upcoming Events

[Biopesticide Industry Alliance Spring Meeting](#)

March 1, 2016
Monterey, California

[International Biocontrol Industry Symposium](#)

March 2, 2016
Monterey, California

[Biocontrols Conference and Expo](#)

March 3-4, 2016
Monterey, California

[NEHA Vectors and Public Health Pests Virtual Conference](#)

April 13-14, 2016

[Integrated Tick Management Symposium: Solving America's Tick-Borne Disease Problem](#)

May 16-17, 2016
Washington, DC

[National Environmental Health Association Annual Educational Conference and Exhibition](#)

June 14 -16, 2016
San Antonio, TX

[National Association of School Nurses Annual Conference](#)

Indianapolis, IN
June 29-July 2, 2016

[International Congress of Entomology](#)

September 25-30, 2016
Orlando, FL

[National Pest Management Association's PestWorld 2016](#)

October 18-21, 2016
Seattle, WA

[School IPM Webinars](#)

Presented by the EPA Center of Expertise for School IPM

- Feb 23, 2016 -- Pest Prevention by Design in Schools
- Mar. 15, 2016 -- IPM for Turf on School Grounds
- Apr. 19, 2016 -- Vertebrate Turf Pests
- May 17, 2016 -- Ants - The #1 Pest in Schools
- Jun. 7, 2016 -- Termite Mitigation in Schools - A Holistic Approach

Grant Opportunities

USDA Announces Funding Available to Support Food and Agricultural Sciences Education at Hispanic-Serving Institutions

The USDA has announced the availability of more than \$8.8 million in competitive funding to support Hispanic-Serving Institutions' (HSIs) agricultural science education programs. While research and extension activities may be included in a funded HSI Education project, the primary focus must be to improve teaching, enrollment, and graduation rates within a degree-granting program.

Priority will be given to projects that promote and strengthen the ability of Hispanic-Serving Institutions to carry out education, as determined by each institution, within a broadly defined area of food and agricultural sciences and related disciplines.

Applications for collaboration projects are due Feb. 9, standard applications are due Feb. 10, and strengthening project applications are due Feb. 12. Please see the [request for applications](#) for specific program requirements.

USDA Announces Funding Available to Support Education and Ag in the Classroom Projects, Programs

The USDA has announced more than \$850,000 in available funding to support the Secondary Education, Two-Year Postsecondary Education, and Agriculture in the K-12 Classroom (SPECA) Challenge Grants Program. These grants will help ensure that a competent and qualified workforce will exist to serve the food, agricultural, natural resource, and human (FANH) sciences system.

The purpose of [NIFA's SPECA Challenge Grants Program](#) is to address educational needs within a broadly defined arena of food and agricultural sciences-related disciplines. These projects should encourage academic institutions, in partnership with organizations and employers, to work collectively to identify and address a state or regional challenge or opportunity facing the FANH sciences education and workforce community.

Applications are due March 18. Please see the [request for applications](#) for specific program requirements.