



PESPWire

The Quarterly e-bulletin of EPA's Pesticide Environmental Stewardship Program Summer 2014

Success With School IPM in Wisconsin



In April 2012, the Cooperative Educational Service Agency 10 (CESA 10), an educational agency providing Environmental Health and Safety (EHS) services to school districts throughout Wisconsin, was awarded an EPA grant to assist in the implementation of Integrated Pest Management in schools across the state. CESA 10 has active contracts with more than 25% of the public school districts, and is able to provide facility services all school districts in the state, making it an ideal organization to facilitate the distribution of the IPM message and the adoption of IPM practices.

Through this project, completed in May 2014, CESA 10 has aided 22 districts in becoming IPM partners or pilots, assisted 38 districts in having at least one person complete the Wisconsin Certified Pesticide Applicator training program and exam, facilitated the on-site pick-up and safe disposal of unwanted chemicals, reduced chemical use, and increased statewide awareness of IPM practices. As evidenced by the successful strides made by this project in Wisconsin, utilizing Educational Services Agencies may yield measurable results in the successful information dissemination and implementation of IPM on a national scale.

Successful Initiatives

- Increased by 26 (30%) the number of school districts contracting with CESA 10 for environmental, health, and safety services for a total of 110 districts
- Established baseline data for all partner and pilot schools and obtained valuable feedback about the program to make future efforts more effective

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Orkin's Perspective on IPM in the School Environment

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With more than a century of experience and a tenured team of nationally recognized technical experts, Gold PESP member, Orkin, has seen and solved nearly every kind of pest problem imaginable, including in the school environment. Today, with sustainability becoming increasingly important, Orkin has invested significant resources into researching and developing an industry-leading Integrated Pest Management (IPM) program designed to meet or exceed even the strictest sustainability standards.

Now, more than ever, schools are requesting comprehensive IPM programs that both support a proactive approach and help minimize residual treatments in their environments. Society is pushing schools to implement IPM programs. Parental concerns, an increase in the general public's pest control awareness, and a desire for environmental sustainability has further heightened this drive.



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Orkin Promotes School IPM

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As a result, many states have passed laws that require an IPM program for schools and daycares. That's one reason Orkin became involved with [School IPM 2015](#), a national USDA-funded group of IPM experts that includes EPA, with the goal to reduce pest problems and pesticide hazards in our nation's schools.



Orkin offers a wide variety of programs that are customized to meet specific IPM needs. Such programs include Orkin School Precision Protection™, which starts with a comprehensive, on-site inspection, which is then used to design a unique and targeted pest management program. For schools that need an even more environmentally conscious program, Orkin Element™ is built on rigorous, research-based IPM protocols that comply with the standards set by GreenPro and Leadership in Energy & Environmental Design (LEED).

Having the right pest management program in place is important since schools present a unique pest control environment. With large foodservice operations, constant foot traffic, optimal temperatures and an abundant supply of food, water and shelter, schools are an ideal habitat for pests. While pests can be an irritating disruption to learning in the classroom setting, they can also be a health threat to students. This is why IPM is so important in the school environment.

The good news is, we're seeing that IPM programs can be successful in schools – and for one simple reason: most schools realize that like education, pest management is a process, not a one-time event. By addressing the underlying causes of pest infestations – access to food, water, and shelter – IPM can often

prevent infestations before pesticides are even considered. IPM utilizes sanitation and facility maintenance strategies to proactively reduce pest access.

While taking a proactive approach is important, finding the right pest management provider is even more key. Not all schools know what to look for when trying to contract an IPM-based pest management service. A successful IPM program in a school is a partnership, and it is the pest control industry's responsibility to educate customers on the principles of an IPM program. When looking for a knowledgeable pest control provider, your industry colleagues can be a good resource. Find out who they partner with and if the partnership is paying off.



Orkin recommends looking for a partner that offers the following:

- Inspections – Inspection should always be the first step. A pest management provider shouldn't offer you a plan without initially walking through and assessing your facility.
- Employment with a licensed pest management company that has a reputation for success.
- Expert knowledge of pests, pest biology and the science behind prevention and treatment.
- An understanding of the local and state ordinances regarding pest control in education environments.
- Awareness of EPA-approved materials as well as environmental standards.

The most successful pest management programs are based on strong partnerships between you and your pest management professional. But, it can be challenging to determine the roles each party should play and the level of service you should expect from your provider. A lack of defined roles and/or commitment from each party can disrupt your IPM program, so make sure you establish clear roles and responsibilities up front.

It has been Orkin's experience that each school presents its own unique challenges and requirements that must be considered when creating a customized program. One of the biggest challenges in creating an effective and efficient IPM program for education environments is getting 100 percent buy-in from school personnel, and their commitment to training new employees on IPM.

This is why one important part of Orkin's School Precision Protection™ program is the development and delivery of training programs for school staff. These training programs discuss the partnership roles involved in a school IPM program, walk through the basics of IPM, and teach staff about the specific pest pressures on their property. School personnel are the "eyes and ears" of an IPM program between service visits by a pest management professional, and they can play a major role in spotting pest activity or conditions that might attract pests. Training sessions will empower staff to make an impact in a school's pest management program and equip them with the knowledge they need to carry out IPM initiatives.

IPM programs will continue to be an integral part of an overall pest management strategy in school environments. As an industry, the focus for pest management professionals will be to continue adapting to the ever changing education environment as both new pest challenges and new technology solutions arise. As long as the pest management professional continues to be invited to the table to have a voice in the discussion, they can continue to provide effective solutions for schools – working together to protect students' health and learning environments.

Dr. Zia Siddiqi is Director of Quality Systems for Orkin (www.orkincommercial.com). A board certified entomologist with more than 30 years in the industry, Dr. Siddiqi is an acknowledged leader in the field of pest management.

Orkin's Easy Steps for Schools IPM:



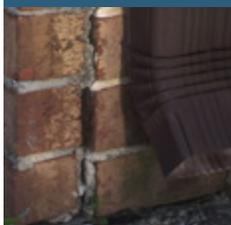
Keep vegetation at least one foot away from school buildings so crawling pests can't make their way inside.

Empty and clean lockers and desks at least twice yearly.

Regularly clean garbage cans and dispose of garbage daily to eliminate odors and food sources that might attract pests.



Keep dumpster corrals clean and free of debris, and move dumpsters as far away from the building as possible.



Seal any cracks and crevices in walls, floors and pavement with weather resistant sealant.

Develop a communication plan for notifying students, parents and faculty when pesticides must be used.



Success With School IPM in Wisconsin

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- Increased awareness within school districts of proper chemical storage and usage by making information readily accessible
- Assisted in the certification of pesticide applicators for staff from 38 school districts
- Provided least hazardous chemicals information and facilitated through partnerships with the Wisconsin Clean Sweep Programs and Lamp Recyclers Inc. the safe disposal of other chemicals to reduce the amount of pesticides and other chemicals stored in schools
- Increased the number of in-state school specific IPM training opportunities
- Assisted half of participating school districts to write a new IPM policy or update an existing IPM policy to adhere to state requirements



Notable Outputs and Outcomes

Information Sharing and Outreach Activities

IPM information is included in summer/fall safety trainings for school staff. CESA 10 IPM speakers presented at the Fall 2013 and Spring 2014 Wisconsin Association of School Business Officials and have been invited to present at the Fall 2014 meeting as well. Also, an IPM article is present in each quarterly *Environmental, Health, and Safety Newsletter* that is distributed to 110 CESA 10 EHS-contracted clients.

Through education of school staff, there has been a reduction in the amount of chemicals brought in and being used from home. Participating schools without a certified pesticide applicator are simply banning the use of pesticides

by staff and relying on professionals when a pesticide application is necessary.

Technical Assistance

Mock district audits, that include an IPM component, are routinely conducted. Additionally, there has been a significant increase in the number of regulatory clarifications, vendor assistance or recommendations, and chemical removal information requested by school districts. Districts have been provided the recordkeeping tools to participate in Material Safety Data Sheet (MSDS) and chemical inventories along with information about how to communicate with their vendors to ensure that only the safest and most effective chemicals are used.

Future Work

Enlisting CESA 10 in the implementation of school IPM in Wisconsin allowed EPA to employ the trusting relationship that already existed between CESA 10 and its contracting school districts to introduce the IPM message to a large number of schools in a short amount of time. The results of this grant indicate that the utilization of the CESA model will allow the facilitation of IPM knowledge sharing and of the execution of IPM practices in schools nationwide.

Furthermore, as many of the participating schools expressed that their largest challenge in the first stages of IPM implementation was time, more work could be done to alleviate this obstacle. As always, it may also be valuable to explore other potential partnerships that could be effectively applied to promote the adoption of verifiable IPM programs by school districts.

For more information: www.cesa10.k12.wi.us



New Cockroaches Call America Home

Though there are various cockroach species throughout the United States, there two new immigrant species which have recently been identified: one in New York City, the other in southern and western states.

New York City is home to eight million people and countless cockroaches, so what about a few more?



Photo Daniel Schwen

The new roach is *Periplaneta japonica*, also known as the Japanese or Yamato cockroach, a petite Asian relative of the common American cockroach, which has now been found in Manhattan. The species was first spotted in New York in 2012 by an exterminator checking a roach trap on the High Line, an elevated walkway and park on Manhattan's West Side.

The species was positively identified using DNA technology by two Rutgers University biologists, Jessica Ware and Dominic Evangelista. Their identification was documented in the *Journal of Economic Entomology*. The biologists suspect that the new pest traveled to the United States in the soil of some imported ornamental plants that adorn the High Line.

Time to panic? The Rutgers researchers say there probably is no reason for New Yorkers to panic because this species is very similar to cockroaches already in the city. The new roach has the potential to thrive in the Northeast due to a unique cold tolerance that allows it to survive freezing temperatures.



Periplaneta japonica male (left) and female
Photo: Lyle Buss, University of Florida/IFAS

What about cross-breeding to create a super-roach? While that's an unsettling thought, it is highly unlikely there will be any cross-breeding because of physical differences between the new and established cockroaches.

Is the Asian cockroach considered an invasive species? To be truly invasive, a species has to move in, take over, and out-compete a native species. That does not appear to be the case here as the new cockroach is very similar to the cockroaches that are already here. However, the Rutgers scientists believe that it will likely compete with other roach species for space and for food. Competition is a good thing. The roaches may spend more time and energy competing and less time and energy reproducing.

New York City isn't the only place seeing changes in its roach populations. In southern and western US cities, the **Turkestan cockroach** (*Blatta lateralis*) is thought to be displacing the common oriental cockroach (*Blatta orientalis*).

The most unusual thing about this immigrant to the southwest, US, is that they are being spread via the Internet retail. The Turkestan cockroach is popular as live feed among reptile breeders and can be easily bought online. As a matter of fact, "this may be the first time that an invasive urban pest species is widely distributed via the Internet through the sale of live insects,"

according to University of California - Riverside scientists Tina Kim & Michael Rust noted in a [2013 article](#).

The Turkestan cockroach, also known as the rusty red or red-runner cockroach, is a close cousin of the oriental cockroach. This new cockroach is primarily an outdoor-dwelling native to an area from northern Africa to Central Asia. It is not known as an aggressive indoor pest, unlike German and American cockroaches. The species is distributed through the Caucasus Mountains, Afghanistan, Iran, Iraq, northeastern Africa; Egypt, Israel, Saudi Arabia, and Libya.

The Turkestan cockroach was first noticed in the US in 1978, around the former Sharpe Army Depot in California, followed shortly after by appearances at Fort Bliss in Texas and several other military bases. Researchers Kim and Rust believe the species may have hitchhiked back to America on military equipment returning from central Asia, perhaps Afghanistan.

We may be looking at a demographic shift in the U.S. roach population.

Turkestan cockroaches have been rapidly replacing the common oriental cockroach in urban areas of the southern and western US. The Turkestan cockroach nymphs have a shorter developmental period, and the adult female produce considerably more eggs than do oriental cockroaches.

With a faster life cycle and larger broods, the Turkestan cockroach is outlaying and displacing its oriental cockroach cousins in many locations. No need to feel sorry for the oriental

cockroach. The American cockroach is believed to have entered the U.S. from Africa with the slave trade and the Oriental cockroach was believed have come from the Middle East.



Adult males of the Turkestan cockroach, *Blatta lateralis*, (left) and the oriental cockroach, *Blatta orientalis* (right)

Photo: Entomological Society of America

There are roughly 4,500 species worldwide, and only 72 species in the US. Of all of these cockroaches, only about two percent are pests. For all their creepiness, the majority of cockroaches do little actual harm. They are scavengers, as they recycle dead animals and vegetable material, and aerate the soil outdoors, thus providing an important ecological cleansing and fertilization service. But they are dirty and carry disease, so it is best if they are kept outdoors.



(That's the white goeey stuff that gets on your shoes when you step on one.)

These enzymes can detoxify the pesticides, so the roaches can go on living. They can also pass on their tolerance level to their offspring. Thus they can easily build up

a resistance to chemicals and pesticides, through only a few generations- making some pesticides ineffective after a relatively short time. This resistance certainly keeps the pesticide industry busy developing new pesticides for cockroaches, and 'building better roach traps'. See why roaches are so hard to eliminate: news.discovery.com/animals/videos/why-tell-me-why-why-dont-cockroaches-die.htm

Seriously. Large indoor cockroach populations are one of the leading causes of allergies, asthma and other bronchial disorders in humans. In fact, cockroaches are one of the main triggers for asthma attacks for children living in inner cities.

Additionally, cockroaches are capable of carrying disease organisms and bacteria on their bodies and in their fecal material. The presence of cockroach populations in and around urban structures is an indication that cockroach food, moisture and harborage resources are present. These conditions allow pests to proliferate and lead to cockroach population explosions.

Still concerned about a roach invasion into your neighborhood? Until recently, efforts to suppress cockroach populations in the urban environment have relied almost exclusively on

repeated applications of synthetic pesticides. This chemical approach to cockroach control has become increasingly less popular, primarily due to the development of multi-chemical resistance among cockroach populations and increased public

concern about pesticide exposure in their living environment, especially around children. These two issues have greatly emphasized the need for a more holistic and less toxic approach to cockroach management.

How to prevent roaches from taking over your school, home or office:

Follow a smart, sensible and sustainable approach to pest control known as **Integrated Pest Management (IPM)** that emphasizes pest prevention. Whether the species are native or new, cockroach control is most easily accomplished by exclusion (preventing their entry) and sanitation (eliminating their food, water and shelter). Not only will these measures prevent a future infestation, they will also help to reduce an existing cockroach problem. If the preceding measures do not solve the problem to your satisfaction, consider baits and traps. For serious infestations, having a professional provide IPM-based advice is a wise decision and may save time, money, and reduce your risk from pests and pesticides.

For information on cockroach IPM, visit schoolipm.ifas.ufl.edu/tp4.htm or www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7467.html



Roaches are the real 'Survivors'.

Think about it: Cockroaches have been around for 300 million years, since the Pennsylvanian Age, long before the dinosaurs, and have survived multiple global extension events. They are built to survive and have a well-earned reputation for an ability to live in the worst of conditions, including scant food or even no air for a time. It is often said that if humanity succeeds in destroying itself, the roaches will inherit the Earth.

They are highly adaptable to either hot or cold. Plus they have a special tolerance for many toxic chemicals. They survive both chemical and pesticide exposures and live to tell the tale. For instance, they can detect the application of a pesticide, decide they don't like it, and make a decision to avoid it in the future. They can do that because they are equipped with fat bodies, - which are pockets of enzymes.



Cockroaches in a monitoring station
Photo: extension.org



Keeping Ticks Away This Summer

It's critically important to protect yourself and your family from ticks and the diseases they carry. This is especially true during the spring and summer when ticks are very active.



Photo: [Center for Disease Control](#)

You want to choose the most effective methods to reduce your risk from ticks based on your specific situation. Your choices will vary depending on whether you're protecting yourself, your home, a park, a school, or an entire community.

EPA supports a common-sense, science-based approach to tick control called Integrated Pest Management (IPM) that relies on a combination of practices rather than solely on pesticide applications. IPM methods for managing the risks from ticks involve the balanced use repellents, acaricides (pesticides that kill ticks), and insecticide-treated clothing.

If you decide to include pesticides in your tick IPM plan, be sure they are EPA registered. An EPA registration denotes that the products have demonstrated safety and efficacy when used according to the label directions. Also, use of the following resources to make informed decisions for your circumstances.

Repellents

EPA's Insect Repellent Web page (cfpub.epa.gov/oppref/insect) can help you determine the best repellent based on the length of protection needed and whether you're concerned with ticks, mosquitoes, or both. In other words, you may need longer protection if you are hiking versus and if you are working in your garden.

Acaricides

Two websites can help you choose the most appropriate area-wide acaricide:

- The National Pesticide Information Center's PPIS website (npirspublic.ceris.purdue.edu/public.html) contains information on the 500+ products registered to control ticks.
- EPA's Product Labeling website (iaspub.epa.gov/apex/pesticides/?p=PPLS:1) provides pesticide label information - application timing, label directions, reapplication intervals, and protection time.

Insecticide-Treated Clothing

Permethrin is the only active ingredient registered for treating clothing to kill and repel mosquitoes and ticks. Information on permethrin-treated clothing can be found at www.epa.gov/pesticides/factsheets/factory-treated-clothing.html.

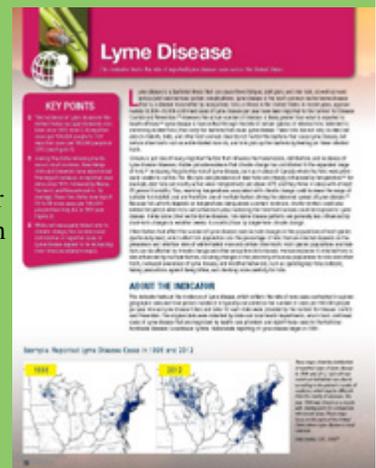
Does Climate Change Increase Lyme Disease Risk?

The answer is yes! There has been international discussion over the past decade on the potential effects of climate change on tick populations and influence on tick-borne diseases, such as Lyme disease.

EPA's 2014 Climate Change: Indicator Report (www.epa.gov/climatechange/pdfs/CI-health-and-society-2014.pdf) notes that there is evidence that climate change has contributed to the expanded range of ticks. This expansion increases the potential for Lyme disease in areas where ticks were previously unable to survive.

Shorter winters and timing of when the winter begins all impact the life-cycle of ticks, allowing for greater exposure to humans than what has been believed. Tick distribution over time is discussed in the report.

The take home message is that when you are outside, especially in the winter, it is best not to assume there are no ticks out. Practice tick safety to prevent exposure year-round. For more on tick prevention, visit www.epa.gov/pestwise/ticks.



Fun and Educational Pest Info for Students and Teachers

The Professional Pest Management Alliance (PPMA), which serves as the public outreach arm of the National Pest Management Association (NPMA), has redesigned its children's website, PestWorldForKids.org. The website, developed for students and teachers in grades K through 8, has many fun and educational sections such as the Pest Guide, report writing center, science fair kits and lesson plans that support standards developed by the National Science Teacher Association and the National Council of Teachers of English. The Pest Guide features the most common pests found nationwide, and for each pest has a section on prevention that focuses on integrated pest management techniques.



New features include a modern layout, updated imagery and two multiple-choice quizzes with cumulative scoring. NPMA's children's eBook series, Critter Crafts videos and PestQuest episodes also live on the site. The website now functions across all platforms – computers, tablets and smartphones.

“PestWorldForKids.org is a favorite online destination for many children and a great tool for teachers to use in the classroom,” said Missy Henriksen, executive director for PPMA. “The site was last updated in 2008 and a redesign was necessary to make it functional and compatible with today's mobile devices. It's also important to keep our younger audience engaged while learning about the wonderful world of bugs, and our fun, vibrant new look and friendly user interface does just that.”

A second phase of the new site, an updated games section, will be rolled out later this year. “The interactive games are one of our most popular features on the site,” said Henriksen.

Upcoming Events

American Phytopathological Society Annual Meeting
August 9-13, 2014
Minneapolis, MN
www.apsnet.org/meetings/annual/Pages/default.aspx

Association of Structural Pest Control Regulatory Officials (ASPCRO) National Meeting
August 24-27, 2014
Missoula, MT
www.aspcro.org

2014 IR-4 Food Use and Biopesticide Workshops
September 9-10, 2014
Atlanta, GA
<http://ir4.rutgers.edu/FoodUse/FUWorkshop/register.cfm>

American Association of Pesticide Safety Educators National Workshop
Sept 18-19, 2014
Harrisburg, PA
<http://aapse.ext.vt.edu/?q=node/499>

Weeds Across Borders Conference
October 14-17, 2014
Ottawa, Canada
http://wssa.net/wp-content/uploads/Weeds-Across-Borders-2014_Call-for-Abstracts.pdf

Pest World
October 21-24, 2014
Orlando, FL
www.npmapestworld.org/pestworld2014

Entomological Society of America National Meeting
November 16-19, 2014
Portland, OR
www.entsoc.org

Association of Applied IPM Ecologists (AAIE) 2015 Annual Conference and Meeting
Jan 30-Feb 3, 2015
Napa, CA
<http://aaie.net/>

Association of American Pesticide Control Officials Annual Meeting
March 9-11, 2015
Alexandria, VA
<http://aapco.org/>

8th International IPM Symposium
March 24-26, 2015
Salt Lake City, UT
www.ipmcenters.org/ipmsymposium15

Hands-on IPM workshops in Western, WA
<http://pep.wsu.edu/ipm/ipmworkshops.html>

- Integrated Weed Management: Landscapes & Natural Areas Oct 1-2, Mt. Vernon, WA
- Site Preparation and Plant Selection Oct 15-16, Puyallup, WA
- Turfgrass IPM: ID, Weeds, and Problem Diagnosis Oct 29-30, 2014, Lacey, WA
- Pesticide Management and Water Quality Jan 21-22, 2015, Puyallup, WA
- Pruning for Plant Health and Plant Problem Diagnosis & IPM Feb 11-12, 2015, Seattle, WA