



PESPWire

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New Biopesticide Aids in the Fight Against California Red Scale

California red scale (*Aonidiella aurantii*) is an armored scale insect native to Southeast Asia and a major pest to citrus crops. California red scale (CRS) infests all of the above-ground parts of a citrus tree. Mere moderate density on the fruit will at minimum reduce the grade of the fruit, if not cause the fruit to be culled altogether in the packinghouse. When CRS is abundant on the leaves and wood, it will defoliate portions of the tree and kill all or part of the branches.

California red scale populations in California have increased dramatically over the last few years due to warmer winters and reduced winter mortality. CRS is typically controlled through the use of conventional insecticides, and insecticide use has increased with the population increase. Unfortunately, California citrus growers have experienced reduced efficacy of these insecticides due to growing pesticide resistance, leading to an additional increase in the applications broad-spectrum insecticides. Many insecticides used to control California red scale are also toxic to their natural enemies, such as wasps and beetles, further compounding the pest control challenges facing citrus growers.

In desperate need of a new tool to combat CRS, California officials requested that the U.S. Environmental Protection Agency expedite the registration of a new biopesticide, California red scale pheromone. EPA was able to accommodate their request, and on April 22, 2016, the pheromone was registered for use.



Male and female California red scale on lemon
Photo: Dennis Navea, ControlBest, Bugwood.org

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California red scale pheromone is a technical grade synthetic arthropod pheromone. It is structurally identical to and mimics a naturally occurring pheromone produced by the female scale insect to attract the males for mating. CRS pheromone is intended for use in polymeric dispensers (passive dispensers hung in the upper canopy of citrus trees) to disrupt the normal mating cycle. The dispensers are typically deployed shortly before the males take flight. Mating disruption results when adult males, having only about six hours to mate before dying, are attracted to the pesticide product in the tree tops, reducing their chances of locating the immobile females. Applications are infrequent because they correlate with CRS mating cycles, which normally occur just once a year.

CRS pheromone is a particularly attractive pest control tool - it is virtually non-toxic; biodegrades rapidly; and poses significantly lower risks than its conventional chemical alternatives. It is applied at such a low rate that concentrations resemble naturally occurring background levels. The pheromone is specific to CRS and will not impact any other insect, including the natural enemies. CRS pheromone provides growers with a very effective tool that both controls this damaging pest and reduces applications of conventional insecticides.



Have Questions on IPM in Schools?

Contact EPA's Center of Expertise for School IPM!

school.ipm@epa.gov | 844-EPA-SIPM

Join our [school IPM Listserv!](#)

For more information, please visit www.regulations.gov.

Docket # EPA-HQ-OPP-2016-0095

Preventing Zika Transmission at Schools

The recent outbreaks and spread of the Zika virus in Puerto Rico, Hawaii, and the southern U.S. have raised concerns about protection against mosquito-borne illnesses. Because students, faculty, and staff spend considerable time in school, the issue is of increasing concern to school districts throughout much of the U.S. The Center of Expertise for School IPM [hosted a webinar](#) to provide practical information on protecting the school population from mosquitoes and the Zika virus at school.

In the webinar, experts reviewed the mosquitoes that are of concern to schools and the interim guidance the Centers for Disease Control and Prevention offers for district and school administrators to help schools keep their students, faculty and staff safe from Zika virus. The first-hand experience of a Florida school district in reduce mosquito populations in an effort to prevent mosquito-borne illness was discussed. A recording of this webinar will soon be available with both English and Spanish subtitles.

There are many preventative measures that schools and individuals can take to reduce mosquito populations and protect themselves from being bitten.

These include removing standing water, insuring the integrity of door and window screens, and, most importantly, taking personal protection measures.

The CDC recommends using EPA-registered insect repellents. When used as directed, these insect repellents are proven safe and effective, even for children and for pregnant and breast-feeding women. Insect repellents registered by the EPA can be expected to repel the mosquitoes that transmit Zika, provided the EPA-approved labeling says the product is for use to protect against mosquitoes in general or against Aedes mosquitoes in particular.

While EPA registers pesticide products, states, local jurisdictions, and school districts may have additional restrictions or guidance around the use of pesticides, including insect repellents, on school property. When using repellents, always follow label directions and safety precautions, and make sure their use is also in line with all local restrictions.

Insect repellents are one part of a more comprehensive program to control mosquitoes that transmit diseases such as dengue or Zika. We recommend integrated pest management (IPM) as well. This includes excluding mosquitoes from the schools by using window and door screens, dressing in light-colored clothing, long pants, and long sleeves, avoiding areas where mosquitoes are present, and removing sources of standing water to prevent breeding.



For additional information:

- CDC [Zika Virus Guidance for School Administrators](#)
- [Using Insect Repellents](#) to protect against mosquito-borne illness
- [Insect Repellent Finder](#) - find the EPA-registered repellent that's right for you
- [General Tips to Prevent Mosquito Bites](#)
- [CDC Recommendations for Preventing Mosquito Bites](#) - includes repellent recommendations
- [Mosquito Control](#) - basic information about mosquitoes, preventing mosquitoes, repellents and pesticides for mosquito control
- [Removing Mosquito Habitats](#)

Key Points about the Zika Virus

Courtesy of [CDC](#)

- Zika virus is spread primarily through the bite of an infected Aedes species mosquito, through sexual contact, or from a pregnant woman to her fetus. Zika virus is not passed directly from person to person through casual contact.
- For most children and adults, Zika virus infection will not cause symptoms or will only cause mild symptoms.
- Zika virus infection during pregnancy is associated with adverse pregnancy outcomes and certain birth defects; therefore, special considerations for preventing exposure might be needed for pregnant women, women trying to conceive, and their male sexual partners.
- School jurisdictions should proactively establish effective channels of communication with local government and public health authorities regarding response plans for local transmission of Zika virus disease.
- School administrators can help provide safe school environments through mosquito bite prevention efforts and sharing of accurate Zika virus information with staff members, students, and families.
- It is not recommended for schools to remove students or staff members who have Zika virus disease or who were exposed to Zika virus, or to cancel school-related activities because of Zika virus concerns.
- Nondiscrimination and privacy and confidentiality measures should be maintained for all students and staff members.



Salt Lake City School District Reaps the Benefits of IPM

Marcia Anderson, Ph.D.

EPA Center of Expertise for School IPM

Originally, the Salt Lake City (SLC) School District controlled pests with monthly pesticide applications. That all changed in 2009 with the implementation of an Integrated Pest Management, or IPM, program in all 36 school facilities that serve over 24,000 students. With self-monitoring and improved reporting of pests, there have been less than 50 targeted pesticide applications in the entire district over the past seven years - a 99% reduction in pesticide use! We sat down with Mervin Brewer, assistant custodial supervisor for the district, to learn more.



Introducing IPM

In order to make the change to IPM, a committee was formed with a representative from each segment of the school support team, including child nutrition, maintenance, custodial, and nursing. The committee slowly hammered out the elements of the district's IPM plan. Initial push-back led to the realization that the staff needed to understand that IPM involves multiple components instead of a single action, and education was needed.

At first, there was resistance when required IPM training was mentioned. Many people wanted what seemed to them to be the simplest solution - have someone come in and spray a pesticide. However, this approach does not tackle the root cause of pest problems. Trainings were initially provided to custodial site managers and head custodians.

Following the first trainings, a unanimous decision was made that pest monitoring should be handled by the custodial staff. In order to conduct pest management activities and apply pesticides when needed, custodians committed to obtaining state pesticide certification and receiving ongoing pest management training.

The head custodian is the IPM coordinator in each building and they conduct ongoing outreach. Part of the district's IPM education plan is to train the teachers, staff, and parents on the basics of IPM. In addition, multiple school districts share a regular IPM blog through their websites. IPM knowledge has slowly been reaching all levels of school staff.

Making IPM Sustainable

In SLC schools, pest sightings were noticeably reduced by one-third. To sustain these dramatic reductions, the district developed and deployed a web-based tool called iPestManager. This tool tracks pest incidents/sightings, pest control methods, costs, and pesticide use. It allows managers to make data-driven pest control decisions based on monthly and yearly information. The data also helps employees to accurately identify predominant pests and the areas with significant pest pressures. Utah State University often supplements the district's IPM efforts by providing education and advice on pest control issues.

Beyond Pest Management

Prior to 2009, the district's annual pest management budget was \$28,000. Once their IPM program was adopted and self-monitoring and maintenance were instituted, pest control expenditures dropped precipitously. Facility staff are self-monitoring all buildings throughout the district.



Sealing up West High School, former home to hundreds of Mexican free-tailed bats.

Image: M. Brewer, SLC School District

Initially, custodial departments focused on procuring simple implements, such as pest monitors and flashlights. They then worked on IPM implementation. In the past eight years, the district has spent only \$32,000 on pest management. Conducting their own monitoring saved the district \$196,000 over that same period.

Spreading the IPM Message SLC's IPM program has reached a sustainable level of success that has enabled

it to promote effective pest prevention strategies with schools throughout the state. Seven other Utah school districts have sought information, guidance, and training from the SLC staff to help them implement the same IPM practices.

In 2014, the Utah Department of Health adopted IPM as part of its "School Rule", requiring IPM in all K-12 public, private, charter schools, and attached preschools. This requirement expedited the spread of IPM throughout the state.

The Utah School Custodial Managers Association (USCMA) has been a focal point for the distribution of school IPM. Membership is open to all custodial managers in the state. USCMA is comprised of about 90 individuals from 15 of Utah's 36 school districts, representing 600 schools. They meet monthly and provide IPM training for all who want to learn more. In addition to IPM, they discuss green cleaning products and procedures, and best management practices.

Carefully Solving a Stubborn Bat Problem

SLC experienced great success utilizing IPM to exclude bats from a 90-year-old high school. Mexican free-tailed bats are a protected species, therefore conventional exclusion and control methods were not appropriate. Facilities staff would see hundreds of bats around the school during their migratory season. The bats were roosting inside the building and depositing piles of guano.

This was an unsanitary condition that posed a direct health hazard to students and staff.

With guidance and training from the University of Utah, the staff waited until all of the bats, including young, had left the building for the season. The building was then properly sealed, fully excluding the bats without posing any risk to their well-being. Over the past five years, an average of only two bats per season have been reported.

Sending Rodents on their Way



Prior to IPM implementation, the SLC school district had struggled with a long-term rodent problem. One high school in particular would see as many as 60 mice a year! The school was located next to a stream, making the building a close target for mice seeking harborage and food. The mice found it very convenient that numerous openings and cracks in the school's foundation provided easy access into the building. Once inside, the mice found pest-conducive pathways to run, undetected, within walls and above ceilings.

Enacting IPM by sealing entry points and monitoring for rodent activity made the building significantly less convenient for the mice. Currently, there are less than 10 occasional rodent invaders annually.

Things You Can Do

As a facility manager you can help your school can get on the IPM path. Take a few minutes to learn more about School IPM, access school IPM resources, or review school IPM training materials.

Mervin Brewer is assistant custodial supervisor for the Salt Lake City School District, the oldest public and 9th largest school district in Utah. The district's 1,300+ teachers serve about 24,600 students in 26 elementary, 1 K-8, 5 middle, 5 high, and 4 charter schools.



EPA and Partners Emphasize Children's Environmental Health at Annual Conference

On August 25, the [U.S. Environmental Protection Agency](#), [University of Texas Rio Grande Valley](#) (UTRGV) and [Southwest Center for Pediatric Environmental Health](#) brought together healthcare workers, environmental experts and community leaders from the U.S. and Mexico for this year's Children's Environmental Health Symposium. The event, also sponsored by EPA's [US-Mexico Border program](#), the [Border Environmental Cooperation Commission](#) and the "Strong Cities, Strong Communities" White House initiative, highlighted health challenges for children living in the border area.

"Protecting children's health is one of EPA's most important priorities, a goal that factors into nearly all our decisions," said EPA Regional Administrator Ron Curry. "We are so pleased to have UTRGV and our other partners help bring together and educate people who share this goal."

"The health and education of our youth is the highest priority," said Veronica Gonzales, UTRGV vice president for Government and Community Relations. "Our local and regional health care providers, in collaboration with the EPA and Congress, will continue to work tirelessly to ensure all children grow up in nourishing environments. Strong, healthy children excel in school, make the right choices, and develop into positively contributing members of their communities."

Topics included environmental factors that contribute to children's health issues, such as air quality, pesticides, and tobacco, as well as guidance on building awareness of these and other issues in border communities. Panels were conducted in English and Spanish, with speakers including doctors and other healthcare workers, community advocates and EPA experts. Several key note speakers presented on Zika and other vector-borne diseases, and the risks to children from unnecessary exposure to pesticides. Plenary and breakout sessions included presentations on the current status of Zika in Puerto Rico and Mexico; dengue virus, chikungunya virus, and Chagas disease risks along the U.S./Mexico border; and updates on childhood pesticide exposures in the U.S. and Mexico.

EPA places special focus on children's health because kids are often more vulnerable to pollutants than adults due to differences in behavior and biology, which can lead to greater exposure and susceptibility during development. EPA's children's environmental health policy directs the agency to explicitly and consistently take into account environmental health risks to infants and children in all risk characterizations and U.S. public health standards.

EPA's Border 2020 program sets a framework for achieving environmental goals in areas along the U.S.-Mexico border. The program emphasizes regional, bottom-up approaches for decision making, priority setting, and project implementation to address the environmental and public health problems in the border region while encouraging meaningful participation from communities and local stakeholders.

The Strong Cities, Strong Communities initiative aims to strengthen neighborhoods, towns, cities and regions around the country by strengthening the capacity of local governments to develop and execute their economic vision and strategies. Strong Cities, Strong Communities bolsters local governments by providing necessary technical assistance and access to federal agency expertise, and creating new public and private sector partnerships.

Ninth International Integrated Pest Management Symposium Announced

[The Ninth International Integrated Pest Management \(IPM\) Symposium](#) will be held in Baltimore, Maryland USA from March 19-22, 2018 at the Renaissance Baltimore Harborplace Hotel.

The International IPM Symposium provides opportunities for professional development, networking with colleagues and leading scientists, and learning the latest research and strategies for effectively managing pests in agriculture communities, and natural areas. The 2018 theme is *IPM: Improving Health, Environment and Global Sustainability*.

Plans for 2018 include mini-symposia, featuring international experts addressing topics including management solutions for newly introduced pests, as well as sessions for agricultural and food company leaders, and increased opportunities for student participation and recognition. Also new in 2018 will be a coordinated opportunity to visit policymakers on Capitol Hill to educate them on IPM needs and benefits.

Participants will also enjoy concurrent sessions, posters, awards, exhibits, and plenty of opportunities to meet with cooperators and potential collaborators. Sessions will address IPM across disciplines, internationally, and in the market place, urban settings, greenhouses, and more.

Past participants at this international event have included researchers, teachers, extension educators, independent consultants, the agriculture and food community, IPM practitioners, academics, government scientists and administrators, non-governmental organizations, students, and business professionals from the U.S. and more than 30 countries.

More details will be forthcoming on the symposium website: ipmsymposium.org/.

Grant Opportunity

What: [Southern IPM Center IPM Enhancement Grants 2017](#)

Deadline: November 18, 2016

The IPM Enhancement Grants Program (IPMEP) is a foundational mechanism used by USDA's Southern IPM Center (SIPMC) to address important issues affecting the region. It that has produced many significant outputs and favorable outcomes addressing Global Food Security challenges, including invasive species, endangered species, pest resistance, and impacts resulting from regulatory actions.

Any IPM setting is applicable to the IPM Enhancement Grant program, including agriculture, urban and school, forestry and recreation. The funding covers one-year projects.

An outcome-based approach is sought after for the chosen projects. Each component of the proposal is explained in detail within the Request for Applications (RFA).

This year does NOT cover proposals for *IPM Documents*. If you would like to submit a proposal for an *IPM Document*, please go to <http://bit.ly/2dqz8qh>.

The RFA and required forms are located at <http://bit.ly/2dpONr4>, which will explain more about the online submission system.

Project directors can apply for one of three (3) project types:

- Seed (up to \$30,000): successful proposals will have a strong potential to initiate, enable, facilitate and/or catalyze effective solutions to important IPM issues and challenges. These projects plant a seed that has good potential to grow into a solution.
- Capstone (up to \$30,000): successful proposals build on previous research and development efforts for projects involving outreach, implementation, and/or educational approaches.
- IPM Working Group (up to \$40,000): please read RFA for requirements

EPA News in Brief

EPA Releases School IPM Bid and Contract Guidance

In August 2016, EPA's Center of Expertise for School Integrated Pest Management published [Integrated Pest Management Program Bid and Contract Guidance](#), a key component of the EPA School IPM toolbox. This guidance provides recommendations for successful procurement of IPM based services for schools. Clear and well-written bid specifications will help reduce confusion and potential problems from low bid firms who are unable to meet the needs of schools throughout the country. This document was developed in collaboration with the Association of Structural Pest Control Regulatory Officials.

EPA Releases Worker Protection Training Guidance

Now available: [Guidance to facilitate the development of train-the-trainer programs](#). The revised Worker Protection Standard requires persons who conduct pesticide safety training for farmworkers and pesticide handlers to meet certain qualifications. One way to qualify as a trainer is to complete an EPA-approved train-the-trainer program. The guidance was distributed electronically to key stakeholders and is now available online. Train-the-trainer programs must be approved by EPA before January 2, 2017.

EPA Issues Experimental Use Permit to Test Innovative Microbial Pesticide to Combat Citrus Greening

EPA has issued an experimental use permit (EUP) to test Citrus tristeza virus (CTV) isolate CTV9R with the spinach defensin proteins on 400 acres of citrus for three years. Defensin proteins are host defense peptides, and can be active against bacteria, fungi and viruses. A temporary exemption from the requirement of a tolerance was also promulgated. The EUP uses a virus naturally present in citrus that has been modified to produce antibacterial defensins from spinach to both protect and rescue trees from citrus greening. The microbial pesticide is not sprayed onto the crop, but rather applied via a grafting process with budwood that contains the virus. This EUP involved coordination with USDA since the field tests are also under their permit and monitoring requirements.

EPA Releases Read the Label Fact Sheets in Additional Languages

The [Read the Label fact sheets](#) are now available online in six new languages: Chinese (simplified and traditional), Korean, Russian, Spanish, Tagalog and Vietnamese. Translations of the fact sheets will help in pesticide education efforts across the country.

Upcoming Events

[4th International Conference on Sustainable Environment and Agriculture](#)

October 26-28, 2016
San Francisco, CA

[Global Summit of Pest Management Services](#)

April 2-4, 2017
New York, NY

[National Association of School Nurses conference](#)

June 30 - July 3, 2017
San Diego, California

[National Pest Management Association's PestWorld 2017](#)

October 24-27, 2017
Baltimore, MD

[9th International Integrated Pest Management Symposium](#)

March 19-22, 2018
Baltimore, MD

[School IPM Webinars](#)

Presented by the EPA Center of Expertise for School IPM

- November 15, 2016 - Plan Your Work and Work Your Plan: Learn How to Develop a Comprehensive IPM Program
- December 13, 2016 - Cockroaches in Your School... You Rarely Find Just One
- January 24, 2017- How Integrated Pest Management Helps Control Pests of Public Health Importance in Schools
- February 21, 2017- More Than Just a Firm Handshake: Bid and Contract Guidance for Securing IPM-Based Services for Schools