



# Integrated Pest Management (IPM) in Health Care Facilities Project

*Spring 2016  
Newsletter*

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Welcome to the Spring edition of the *IPM in Health Care Facilities newsletter*, published by the **IPM in Health Care Facilities Project**—a partnership of the Maryland Pesticide Education Network and Beyond Pesticides. The Project enables and facilitates transition to safe pest management practices at Maryland health care facilities. This newsletter is part of the Project's outreach effort to share information with Maryland health care facilities interested in effective pest management that protects patients, residents, staff and visitors from unnecessary exposure to pesticides.

# Anne Arundel Medical Center Honored: Pesticide Free in 2016!

On March 9, 2016, The Integrated Pest Management in Health Care Facilities Project honored the Department of Environmental Services at Anne Arundel Medical Center (AAMC), for its outstanding achievement in adopting a “green pest management” approach in the facility through implementation of defined Integrated Pest Management (IPM), an approach that eliminates the use of toxic chemicals in managing pests by prioritizing non-chemical pest-preventions strategies, with least toxic pesticides only used as a last resort. AAMC joins Springfield Hospital Center (2010), Johns Hopkins Bayview (2011), University of Maryland Medical Center (2012), and Howard County General Hospital (2013) as the fifth facility to receive the Project’s Sustainable Pest Management Award for committing to an IPM system to protect the health of patients, staff, and the environment.

AAMC has shown exceptional leadership in advancing facility management practices that eliminate hazardous pest management chemicals with attention to prevention-oriented practices that are key to patient and worker safety. By incorporating IPM into AAMC’s green practices, the hospital ensures that conditions that can contribute to future pest problems are eliminated with non-toxic preventive measures. This model for building management leads to successful toxic-free facility pest management.



## **Why are hospitals transitioning away from toxic pesticides?**

Many of the pesticides commonly used in health care facilities are known to contribute to cancer, neurological disorders, problems with reproduction, birth defects, liver and kidney damage. Certain pesticides have also been linked to eye irritation, respiratory problems, such as asthma, headaches, nausea, and learning disabilities in children. Hospital patients who have compromised immune and nervous systems, respiratory illness, the elderly, infants and children, and those who have a sensitivity to pesticides are particularly vulnerable to the toxic effects of pesticide exposures. Patients taking certain medications may also have heightened reactions to pesticides.

Facilities participating in the Project’s Partnership Program agree that IPM prioritizes pest prevention and non-chemical interventions as key components to **greening** their facilities. Under an IPM approach, only least-toxic pesticides are used as a last resort for pest management. This approach is especially important for patient and long-term care populations, who are especially vulnerable to chemical-intensive pest control methods that can cause or exacerbate the very diseases and conditions for which they are being treated.

Feel free to contact us to learn more about how you can improve patient, staff and visitor safety by reducing pest complaints and toxic chemicals in your facility—with no increase in cost.

## Anne Arundel Medical Center, *continued...*

### **Anne Arundel Medical Center's Commitment to IPM**

The commitment to IPM at AAMC has been championed by Inar Maharaj, Director of Environmental Services and Security, and Charlotte Wallace, RN, Sustainability Coordinator. Mr. Maharaj has the responsibility of directing the environmental services department and overseeing the pest management contract. He ensures that his staff understands how their role in maintaining a clean environment helps to *prevent* pests. If a pesticide is needed when all other pest prevention options have failed, then, he directs the pest management technician to use non-toxic, and lastly, least-toxic pesticides.



*The Anne Arundel Medical Center Environmental Services Team accepting the Sustainable Pest Management in Health Care Facilities Award, March 9, 2016*

As the sustainability coordinator, Ms. Wallace has elevated AAMC to industry-leading standards in green practices. Many facilities that are on the cutting edge of green building management fail to address pest management and continue to rely on chemical-intensive pest management methods, which depend on routine applications of pesticides inside and outside of a facility as a control measure. Ms. Wallace understands that a truly green facility goes beyond energy conservation and waste reduction, and ensures that AAMC takes a non-toxic approach in all areas of the hospital. "Just like any residential homeowner, in order to maintain a high-quality and safe environment, we prioritize environmentally friendly measures to prevent and eliminate pests and use least hazardous pesticides only as a last resort," says Ms. Wallace, AAMC's sustainability coordinator. "We are proud of our work around providing a patient-centered approach to an environmentally friendly hospital."

**SPRING LANDSCAPE TIPS:** Reliance on synthetic fertilizers, herbicides, fungicides, and insecticides to treat turf and landscape can adversely affect facility patients, visitors, and staff! Studies show that hazardous lawn chemicals can both impact people when exposed to them outdoors as well as contaminate indoor air by drifting into buildings.

Organic turf management is a "feed-the-soil" approach that centers on natural, organic fertilization, microbial inoculants, compost teas, microbial food sources, and topdressing as needed with high quality finished compost. These inputs, along with very specific cultural practices, which include mowing, aeration, irrigation, and overseeding are the basis of the program.

An organic lawn uses fewer materials, such as water and fertilizers, and requires less labor for mowing and maintenance. More importantly, an organic lawn provides a safe environment for the patients, residents, staff, and visitors at a health care facility.

See the [2015 Newsletter for a detailed description of Organic Lawn Care](#)

# Roach Control and Prevention without Toxic Pesticides

Roaches present a significant challenge at facilities. Roaches are disease vectors; their ability to transport germs and act as asthma triggers makes for a zero tolerance policy for roaches at any facility. Unfortunately, since these insects eat almost anything, and they have a knack for living, breeding and traveling in hard to reach places, solving a roach infestation is a difficult task. The most effective way to solve a potential roach pressure is through **prevention**.

## **Human health:**

Cockroaches have significant negative consequences for human health. They can transport both proteins (called allergens) and microbes that include potentially dangerous pathogens. The allergens can cause allergic reactions or trigger asthma symptoms while the pathogens can include E. Coli, Salmonella, and other bacteria or parasites dangerous to humans.

## **Identification:**

German cockroaches are tan, brown, or almost black, and have two dark – almost black – parallel bands running the length of the pronotum. They grow to about half an inch and do not fly. This roach prefers squeezing into small cracks where their backs and undersides make contact with other surfaces. They are often found backed into cracks with their antennae and heads sticking out, picking up chemical signals from the air, which their behavior is more dependent upon than vision or sound. They become more active 20 minutes to 2 hours before dark, and increase their activity to a peak ending before daybreak. Only when populations have significantly increased to a certain threshold will they be

active during daylight. The first step for preventing roaches is to understand the biology, lifecycle, and habitat of the roach, particularly where they enter, what they eat, and where they can survive.



## **Preventing cockroaches in health care facilities:**

### **Sanitation:**

- Remove sources of water
- Remove food sources
- Dispose of trash
- Place trash in sealed containers
- Store food in air-tight, sealed containers
- Remove clutter such as piles of paper where roaches can hide
- Do not store food in cardboard boxes
- Remove items from cardboard packaging and then remove cardboard from the facility
- Keep drains clean
- Keep kitchen appliance free of grease

### **Structural:**

- Keep drain caps full or capped
- Caulk all cracks and crevices
- Caulk around items that are fixed to the wall (ie. a bulletin board)



## Roach Control and Prevention, *continued...*



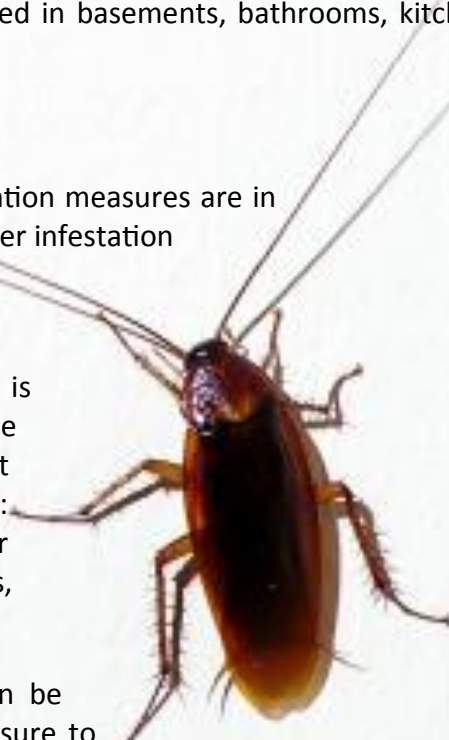
Most German cockroaches enter a facility when an egg case (each egg case can contain up to 50 eggs) is introduced in shipped materials, beverage cases, or produce packaging. They are often hidden deep in the folds of corrugate cardboard. When roach egg-case-infested cardboard enters a facility or dietary area and is not removed, the eggs have time to mature and hatch. If they hatch into an environment with moist floors, dirty trash receptacles, access to food waste, as well as cracks and crevices for shelter, an infestation is likely. These roaches are the most ubiquitous pest and are found throughout the world.

American Cockroaches are larger than their German cousins. They can grow to about 1.6 inches and are reddish brown in color. They can fly, although they rarely do. The most common entry point for these roaches, also known as the waterbug, are sewer connections; thus, they are often discovered in basements, bathrooms, kitchen areas and unused drains.

### **Control**

If a roach is discovered, the first step is to make sure that all prevention measures are in place. If the roach is denied access to food, water, and shelter, a further infestation is unlikely. Step two: to eliminate a current roach infestation, use least-toxic products.

- ◆ Boric acid is the most effective direct control method and it is available in a variety of products and formulations. It can be applied as a gel or liquid bait, or in its traditional granular form. It should be applied to cracks and crevices where roaches hide: inside and behind cabinets and appliances, wall cavities, under sinks, and near pipe penetrations. Boric acid, does not offgas, making it a safe product to use in a health care facility.
- ◆ Dessicating dust, such as diatomaceous earth or silica gel, can be blown into voids through small holes drilled into the walls. Be sure to choose a dust that is not mixed with pyrethrins, as this chemical has been known to cause allergies, asthma, and respiratory irritation. Dusts with pyrethrins are typically formulated with piperonyl butoxide (PBO), a synergist that reduces the ability of both insects and humans to detoxify pesticides. Inhaling PBO can cause labored breathing and an accumulation of fluids in the lungs, and is also linked to cancer. Dusts sealed into wall voids or cracks can be effective for many years if they are kept dry.



# Pesticide Profile: Indoxacarb

Indoxacarb is a very common chemical used in many products designed for killing insects, such as roaches and ants. Some pest management technicians consider it a least-toxic pesticide. However, due to its toxicity and volatility, **indoxacarb is not a least-toxic** and should not be used in an IPM program.

## What is Indoxacarb?

Indoxacarb is a broad spectrum insecticide used to kill many insects. It is found in several formulations, including tablets, granules, water dispersible, and gel. Indoxacarb has been promoted by the industry as “reduced-risk,” but serious health risks have been associated with exposure to this chemical. It works by interfering with the flow of sodium ions into nerve cells. This flow of sodium ions is essential to nervous system function. This disruption can cause tremors, cessation of feeding, paralysis and death in insects.



## Volatility and Alternatives to Indoxacarb

Indoxacarb has a low vapor pressure, which contributes to the occasional misuse of this chemical as a least-toxic pesticide. However, despite its *low volatility*, it is volatile and will evaporate poisonous vapors into the ambient air. In sealed buildings, such as health care facilities, pesticide residues present a greater risk to air supply.

With an effective IPM plan in place, non-toxic strategies are implemented first to prevent and combat pests, such as ants and roaches, instead of using pesticide products containing indoxacarb. These strategies include caulking and sealing small openings, cracks, and holes, removing habitat, such as cardboard, storing food in sealed containers, repairing leaks and removing standing water, and maintaining dietary areas free of grease and other potential food sources for pests.

As a last resort, a least-toxic pesticide can be used. Products like boric acid, diatomaceous earth, and silica gels are completely non-volatile and are thus considered least-toxic in an IPM program.

## Toxicity

Studies suggest that indoxacarb is associated with both acute and chronic toxicity. EPA has classified indoxacarb as a moderate dermal irritant (acute toxic category III), due to its ability to cause skin sensitization after contact. If ingested orally, it is classified as toxicity category II, and is extensively metabolized by the liver. There is evidence of lung damage in acute inhalation studies which indicate the development of acute lung injury and high permeability pulmonary edema. This is attributed to an oxidant generated during indoxacarb metabolism.

Indoxacarb also shows some signs of neurotoxicity after acute exposure in rats; causing a decrease in motor activity and decreased forelimb grip strength.

Chronic exposure can cause a reduction in the number of red blood cells and a depletion of blood-forming elements in the bone marrow and lymphoid organs. Chronic exposure can also cause neurotoxic symptoms similar to acute symptoms: weakness, abnormal mobility, and inability to stand.



## Legislative Update:

As of March 20, 2016, the Maryland Senate and House of Delegates passed different versions of the 2016 Pollinator Protection Act, which restricts the sale of neonicotinoid pesticides - a class of pesticides confirmed to kill bees and other pollinators. The House and Senate will need to reconcile the bill differences before a final bill can go to the Governor to be signed into law. The Smart on Pesticides Campaign, a coalition of 76 organizations and businesses, spearheaded by the Maryland Pesticide Education Network, supports the House version of the bill, which is free of weakening amendments.

Given its nationally ground-breaking impact, passage of the Pollinator Protection Act in both chambers has received substantial media attention from both local Washington Post and national media outlets underscoring that Maryland is leading the way on this issue. Watch this video featuring Hollywood actor Ed Begely supporting the need for Maryland's Pollinator Protection Act, and this wonderful kids video also highlighting that we need to Give Bees a Chance.



**Smart on Pesticides**  
@PesticidesSmart

Find out why @edbegleyjr says Md needs to pass #Pollinator Protection Act: [bit.ly/BeeBill](http://bit.ly/BeeBill)  
#MDGA16 #BeeSafe

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RETWEETS 13 LIKES 7

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*Beekeepers at the State House with the Senate bill sponsor Senator Nathan Pulliam*

Del Healey: "it's simple: let's give bees a chance" -- hey, that's our song! check out the video [youtu.be/1nDRGITZG7g](http://youtu.be/1nDRGITZG7g) #MDGA16 #BeeSafe

**PesticidesSmart**  
PesticidesSmart is an initiative of the Maryland Pesticide Network -- a grassroots coalition dedicated to protecting public and the environment from toxic pe...  
[youtube.com](http://youtube.com)

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This past year Maryland beekeepers lost 61% of their hives and expect similar losses this year. We are losing bees and beekeepers - both essential to our food supply. Most of the produce we eat depends on our pollinators - berries, melons, broccoli, tomatoes, cauliflower, almonds and so much more.

## Upcoming Events:

### **34th Beyond Pesticides National Pesticide Forum: Cultivating Community and Environmental Health**

*Models for sustainable and organic strategies to protect ecosystems, pollinators, and waterways*

**When:** April 15-16, 2016

**Where:** University of Southern Maine, Portland, Maine

**About:** This year's conference focuses on the adoption of policies to protect human health and the environment, and organic land and building management strategies. The conference brings together top scientists, policy makers, and public health and environmental advocates to interact and strategize on solutions that are protective of health and the environment.



Beyond Pesticides is collaborating with local groups, including the Maine Organic Farmers and Gardeners Association (MOFGA), Toxics Action Center, and Protect South Portland, as well as other local environmental and human health advocacy organizations. Speakers include **Aaron Blair, Ph.D.**, a National Cancer Institute researcher (emeritus) and the overall chair of the International Agency for Research on Cancer's (IARC) evaluation panel that found glyphosate (Roundup) to be a carcinogen; **Jonathan Lundgren, Ph.D.**, a top U.S. Department of Agriculture (USDA) entomologist who received a prestigious national award for civic courage for his work on neonicotinoids and pollinator decline in the face of agency attempts to suppress his work; **Jim Gerritsen**, an organic farmer and president of the national farmer-run membership trade organization, Organic Seed Growers and Trade Association (OSGATA), which served as lead plaintiff in the landmark organic community federal lawsuit, *OSGATA et al. v. Monsanto*; **Honorable Chellie Pingree**, *United States Representative of Maine's 1st district*; and others.

**For more information and to register go to:**

**<http://beyondpesticides.org/programs/national-pesticide-forum/overview>**



### **Health Care Sustainability Conference and Exposition**

**When:** May 17-19, 2016

**Where:** Omni Hotel, Dallas, Texas

**About:** CleanMed is the premier national environmental conference for leaders in health care sustainability who are on the leading edge of greening the health care sector. At this year's conference, the IPM in Health Care Facilities Project Director, Matt Wallach, will be presenting on the benefits of integrated pest management for health care facilities.

CleanMed is presented each year by Practice Greenhealth, the leading membership association for hospitals and businesses engaged in sustainable health care, and Health Care Without Harm, the campaign for environmentally responsible health care and advocate for environmental health and justice across the globe.

**For More Information and to Register go to:**

**<http://cleanmed.org/>**