

# INTEGRATED PEST MANAGEMENT (IPM) IN HEALTH CARE FACILITIES



## FALL 2010 NEWSLETTER

Welcome to the fall edition of the *IPM in Health Care Facilities* newsletter, published by the Integrated Pest Management (IPM) in Health Care Facilities Project—a partnership of the Maryland Pesticide Network and Beyond Pesticides in collaboration with the Maryland chapter of Hospitals for a Healthy Environment (H2E). 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.

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, which 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.

This edition of the newsletter includes tips on **fall landcare** that can reduce pest problems and the need for pesticides. We also continue our **new section of pesticide profiles** about chemical products that may be in use in your facility without your knowledge.

**Save the Date: November 4, 2010**  
**FREE IPM and Organic Land Care Training**  
**8:30 am – 4:30 pm**  
**Location: The Associated, in Baltimore**  
see page 6 for full details

## **FALL SEASON LANDCARE**

Practicing natural landcare, including an integrated pest management approach for turf and landscape, is an important step in greening your facility. Poor soil conditions resulting from chemical practices that impair soil biology are a primary source of both harmful environmental health effects off-site and turf and landscape management problems on-site.

### **Did you know that:**

Non-target impacts of herbicides, fungicides and broad-spectrum insecticides destroy soil health and many beneficial microbes, fungi, insects and other organisms that can reduce the degree of intervention needed for quality turf and landscape.

- Foot traffic brings lawncare chemicals into your facility.
- Organic materials build 'deep' biology in the soil, while synthetic fertilizers lead to turf with shallow root systems.
- Building healthy soil has long-term benefits: in just a couple of seasons, turf will be deeper-rooted and will remain greener in dry periods and into the winter.
- Compost is a source of good microbes and can be top dressed in a 1/3 inch layer on lawn, trees and shrubs.

When selecting a landcare vendor or recontracting with an existing vendor, we recommend you consider a turf and landscape program that builds soil health instead of relying on synthetic fertilizers, herbicides, fungicides and insecticides to treat problems.

Healthy soil refers to the ability of the soil to function and it is the foundation to a healthy lawn and garden. Healthy soil is alive: one teaspoon of soil contains about four billion organisms that keep the ground from becoming dense and compacted, recycle nutrients for the plants, protect plants from disease and stores water for the plants.

### **Steps to have your land care vendor take to create healthy soil and promote natural land care:**

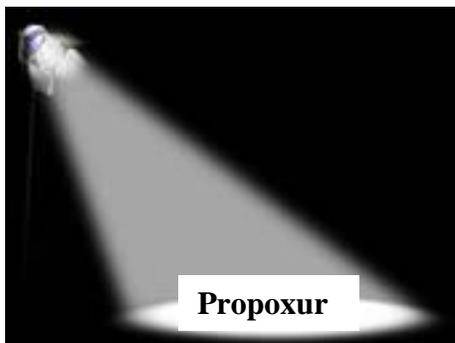
- Feed the soil with a top layer of compost.
- Mulch the area with leaves, wood chips or grass clippings.
- Use only organic, slow release fertilizer when fertilization is needed.
- Choose indigenous plants that are pest and drought resistant.
- Water deeply and less frequently and do so early in the day to reduce evaporation.
- Mow higher off the ground (three inches) and leave the clippings.



Fall fertilization encourages root growth, promotes healthy soil and provides results you can see in the spring. We recommend that your facility or your landcare vendor use a slow-release, organic-based fertilizer instead of conventional synthetic fertilizer that includes pesticides, thereby reducing the risk of exposure to your patients, residents, staff and visitors at your facility. Additionally, treated lawns, gardens and athletic field produce runoff after storms that harm the Chesapeake Bay, its tributaries and aquatic life.

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*For more information, contact: Sharon Fried, Project Director at 410.605.0095 or [sfried@beyondpesticides.org](mailto:sfried@beyondpesticides.org)*



## **Pesticide Profile: PROPOXUR**

**Propoxur: what is it, why is it being used in your health care facility and should you be concerned?**



Common pesticides containing propoxur are Crack & Crevice II, Ortho Ant and Baygone for ants and roaches and Zodiac Pet Collars and Spot On Flea Control for fleas and mites. The Environmental Protection Agency (EPA) stated in 1997 that professional pest control applicators, as well as residents and pets, can be exposed to propoxur during and after applications around the home and in commercial and industrial settings. It is highly toxic and classified by EPA as a probable human carcinogen.

### **Introduction**

We continue our profile of pesticides currently in use in health care facilities since it came to our attention that some pest management providers are relying on chemicals as a first choice product to pest management in those settings. This approach is antithetical to IPM, where least-toxic pesticides are used *only* as a last resort. The significant health risks linked to propoxur exposure need to be seriously considered given the vulnerable populations that health care facilities serve. This is especially important since there are successful nontoxic and less toxic interventions available for the very pest pressures for which propoxur is now being used. In an IPM program, pest sightings indicate that there are causes that need to be addressed. These underlying causes could be structural or mechanical in nature or sanitation could be a cause. When the source is addressed, most often there is no need for pesticide use.

At times, however, when all non-chemical methods have been exhausted and the pest problem continues, a pesticide may be needed. In an IPM program, least-toxic pesticides are only as a last resort. Boric acid products can address the same pest problems that propoxur does. It is a least-toxic product and does not pose the health hazards that exposure to propoxur can cause. While it takes more time for boric acid to resolve the issue, boric acid will be successful; and, it will protect patients, staff, residents and visitors from exposure to a toxic chemical. Because it does not volatilize, boric acid is considered a least-toxic product.

### **Mode of Action**

Propoxur, as a carbamate insecticide, causes acute toxicity by acting as a cholinesterase inhibitor. Cholinesterase is an enzyme needed for proper functioning of the nervous system

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of humans, other vertebrates and insects. Organophosphates and carbamates work to inhibit cholinesterase by interfering with the synapses in the central nervous system thereby causing an increase in acetylcholine, which results in extreme neural excitation and death of the insect. It is used against cockroaches, ants, fleas, ticks and mosquitoes. Propoxur is often used in health care facilities in a spray formulation and placed into small spaces such as cracks and crevices. Despite its containment, it will still volatilize into the ambient air.

### **Toxicity**

The potential acute effects from propoxur exposure include headache, dizziness, blurred vision, labored breathing, sweating, nausea, vomiting, diarrhea, weakness and muscle cramps. Propoxur is classified by EPA as a probable human carcinogen.

Since some residential facilities include pets and working service dogs and some health care facilities include working security dogs, it is important to include that propoxur has also caused neurotoxicity to dogs. Severe skin reactions to Zodiac fleas control products have occurred, with skin irritation and hair loss at the site of application. Organs affected by chronic exposure may include the liver, thyroid and kidney. Additionally, people can be exposed to propoxur when they pet an animal that has received a flea treatment.

### **Breakdown and Volatility**

Propoxur is highly volatile. Volatility is the capacity of a substance to evaporate, thus moving through the air, being easily inhaled and moving widely as its persistence permits. Studies are showing health impacts of pesticides at extremely low levels, even when the health effect is not seen at larger doses. These low level exposures are not typically evaluated by EPA.

Propoxur has a half-life of 13 days at 25°C (77°F), meaning that half of the amount of propoxur applied will still be present 13 days later and 25% of the original application amount will be present after 26 days. In sunlight, the half life decreases to 10 days, but increases to 33 days in the soil.

### **Environmental Fate**

Propoxur is highly toxic to fish and other aquatic organisms. It is also highly toxic to bees and moderately to very highly toxic to birds.

### **Resistance**

Pesticide resistance is the adaptation of pest species targeted by a pesticide resulting in decreased susceptibility to that chemical. Pests develop a resistance to a chemical through selection. The most resistant organisms are the ones to survive and pass on their genetic traits to their offspring. German cockroaches, house flies and mosquitoes have documented resistance to propoxur.

## Non-Toxic and Least-Toxic Options to Propoxur for Structural Pest Management

Heat treatment, boric acid, silica gels, diatomaceous earth and essential oils

### Sources:

[www.epa.gov/oppsrrd1/REDs/factsheets/2555fact.pdf](http://www.epa.gov/oppsrrd1/REDs/factsheets/2555fact.pdf)

[www.beyondpesticides.org/pesticides/factsheets/propoxur.pdf](http://www.beyondpesticides.org/pesticides/factsheets/propoxur.pdf)

[www.pesticideinfo.org/Detail\\_Chemical.jsp?Rec\\_Id=PC35769](http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35769)

[www.extoxnet.orst.edu/tibs/cholines.htm](http://www.extoxnet.orst.edu/tibs/cholines.htm)

[www.co.thurston.wa.us/health/ehcsg/5stepslawn.html](http://www.co.thurston.wa.us/health/ehcsg/5stepslawn.html)



### Pesticide Induced Diseases Database – [www.beyondpesticides.org/health](http://www.beyondpesticides.org/health)

The common diseases affecting public health are all too well-known in the 21st century: asthma, autism and learning disabilities, birth defects and reproductive dysfunction, diabetes, Parkinson's and Alzheimer's diseases and several types of cancer. Their connection to pesticide exposure continues to strengthen despite efforts to restrict individual chemical exposure, or mitigate chemical risks, using risk assessment-based policy.



The Pesticide-Induced Diseases Database, launched by Beyond Pesticides, facilitates access to epidemiologic and laboratory studies based on real world exposure scenarios that link public health effects to pesticides. The scientific literature documents elevated rates of chronic diseases among people exposed to pesticides, with increasing numbers of studies associated with both specific illnesses and a range of illnesses. With some of these diseases at very high and, perhaps, epidemic proportions, there is an urgent need for public policy at all levels –local, state, and national—to end dependency on toxic pesticides, replacing them with carefully defined **green strategies**.

The current database, which contains hundreds of studies, is preliminary and will be added to over the coming months. We urge readers to send studies to [info@beyondpesticides.org](mailto:info@beyondpesticides.org) that you think should be added to the database.

## **Integrated Pest Management (IPM) & Organic Landcare**

**Free Training: November 4, 2010**

**Sponsors:** *The IPM in Health Care Facilities and Community Outreach Project*, co-sponsored by the Maryland Pesticide Network and Beyond Pesticides in collaboration with Maryland H2E.

**What:** Training sessions will provide instruction on technical aspects of least-toxic structural IPM and natural landscape management that minimize health and environmental impacts while achieving enhanced pest management.

**Who/When: November 4, 2010**

8:30 am - 12:00 pm -- Structural IPM:

Tom Green, President, IPM Institute of North America

1:30 pm - 4:30 pm -- Natural Landcare:

Chip Osborne, President, Osborne Organics

*Refreshments will be provided. Lunch on your own.*

**Where:** The Associated  
101 W. Mount Royal Avenue  
Baltimore, MD 21201

**Free Parking:** at The Associated garage with your stamped ticket  
(directions available with your confirmed registration)

**Register by October 20**

**Contact Sharon Fried, Project Director**

**[sfried@beyondpesticides.org](mailto:sfried@beyondpesticides.org) or 410-605-0095**

Also of Interest: Save the Date

**Maryland Hospitals for a Healthy Environment and  
University of MD School of Nursing Present:**



Join regional and national health care professionals, environmental industry experts, and educators for this learning and networking event designed to showcase the best practices of hospitals as they journey to more sustainable environments for hospital staff, patients, and communities. Topics may include an array of environmental best practices for purchase of goods and services, procedures in the operating room, design and construction of buildings, purchase and usage of energy, management of hazardous pharmaceutical waste, and procurement and service of sustainable food.

**Where:** University of Maryland School of Nursing  
655 W. Lombard St.  
Baltimore, MD 21201

**When:** November 18, 2010  
7:30 am – 4:00 pm

**Cost:** \$55 per person

**Keynote Address:** Gary Cohen, President and Co-Founder of  
Health Care Without Harm

**For More Information:** [www.mdh2e.org](http://www.mdh2e.org)