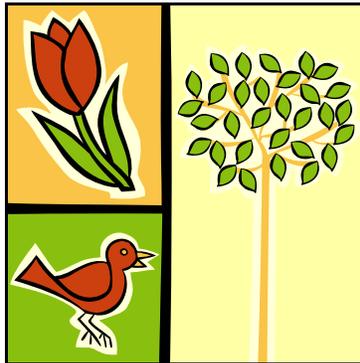


INTEGRATED PEST MANAGEMENT (IPM) IN HEALTH CARE FACILITIES



SPRING 2010 NEWSLETTER

Welcome to the spring 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. 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 introduces a **new section: pesticide profiles** about chemical products that may be in use in your facility without your knowledge. It also focuses on current news and research related to pesticide use. We explore **organic lawn care** and its cost comparison to conventional (chemical) lawn management and take a closer look at **Baltimore's Sustainability Plan**.

Save the Date: May 11 -13 2010



Held this year at the Baltimore Convention Center in Baltimore, MD

For more information go to www.cleanmed.org



A New Feature: Pesticide Profile

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



Common pesticides containing fipronil, a phenylpyrazole insecticide, are Frontline®, Frontline® Topspot™, Combat®, and MaxForce®. Concerns about human exposure to Frontline spray treatment were raised in 1996, leading to a denial of registration for the spray product.

Introduction

It has come to our attention that many pest management providers are relying on the chemical fipronil as a first choice product to pest management in health care settings. This approach is antithetical to IPM, where least-toxic pesticides are used *only* as a last resort. The significant health risks linked to fipronil exposure need to be seriously considered given the vulnerable populations that health care facilities serve. This is especially important since there are successful less toxic and nontoxic interventions available for the very pest pressures that fipronil is now being used for. 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 fipronil does. It is a least-toxic product and does not pose the health hazards that exposure to fipronil 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.

Mode of Action

Fipronil is a disruptor of the insect central nervous system via the GABA channel, acting with contact and stomach action. It blocks the GABA-gated chloride channels of neurons in the central nervous system, resulting in neural excitation and death of the insect. It is used against cockroaches, ants, fleas, ticks and mites. Fipronil is often used in health care facilities in a gel bait formulation and placed into small spaces such as cracks and crevices. Despite its formulation and containment, it will still volatilize into the ambient air.

For more information, contact: Sharon Fried, Project Director at 410.605.0095 or sfried@beyondpesticides.org

In its chemical class, fipronil is considered a highly volatilizing agent. In addition, the inert ingredients that often comprise the majority of any product can be more toxic than the active ingredients. To date, inert ingredients are trade secrets that are not available to the public; and, as such, the health impacts cannot be fully assessed.

Toxicity

The potential acute effects from fipronil exposure include headache, nausea, eye and skin irritation and weakness. Fipronil is classified by the U.S. EPA as a possible human carcinogen. Fipronil can disrupt thyroid function—responsible for cell metabolism—by decreasing plasma concentrations of total thyroxine (T4) likely through increased T4 clearance. Chronic effects of fipronil exposure include endocrine disruption, neurotoxicity and negative reproductive outcomes.

Some residential facilities include pets and working service dogs and some health care facilities include working security dogs. Therefore, it is important to include that fipronil has also been found to be neurotoxic to dogs. Severe skin reactions to Frontline Topspot for Cats and Topspot for Dogs 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. Reproductive toxicity occurred at the higher doses tested, with clinical signs including reduced fertility, decreased litter size, decreased body weights in litters, and fetus mortality. Additionally, people can be exposed to fipronil when they pet an animal that has received a flea treatment.

Breakdown Products

Fipronil breaks down into what is known as MB 46513, which is about 10 times more acutely toxic to people than fipronil itself. It can also break down into the metabolite MB 461, which is more highly toxic to birds. Other break down products, including the metabolites MB 46136 and MB 45950, are more highly toxic to freshwater invertebrates than fipronil itself.

Environmental Fate

Fipronil is stable at normal room temperature for one year in the absence of metallic ions. Decomposition of fipronil was less than 0.5% after storage at 100oC for one day and 50oC for seven days. The half-life of fipronil was found to range from 122-128 days in oxygenated sandy loam soil, 0.7 to 1.7 months on soil surfaces, and 3 to 7.3 months when incorporated in soil.

Resistance

Although fipronil is a relatively new insecticide, four common species have developed resistance to it. Among them are house flies. Fipronil resistance can develop quickly. In Taiwan, fipronil was first used in 1996 and the diamondback moth had developed resistance within two years. After five years of use, the amount of fipronil required to kill diamondback moths in Taiwan had increased 100-fold!

Least-Toxic Options to Fipronil for Structural Pest Management

Boric acid, silica gels, diatomaceous earth and essential oils

Resources:

Beyond Pesticides. *Least-toxic Control of Pests Factsheets, Fipronil*.
www.beyondpesticides.org/alternatives/factsheets/index

National Pesticide Telecommunication Network (NPTN). 1997. *Fipronil Technical Fact Sheet*. December. Oregon State University. Corvallis, OR.

Northwest Coalition for Alternatives to Pesticides (NCAP). 2005. *Insecticide Factsheet, Fipronil*. Spring. *Journal of Pesticide Reform*, Vol. 25. No. 1. Eugene, OR.

Pesticide Action Network – UK (PAN). 2000. *Active Ingredient Fact Sheet: Fipronil*. June. *Pesticide News*, 48:20-22. London, England.

We will profile **propoxur** in our next issue of the newsletter since we are seeing resurgence in use of that pesticide. If you would like to read more about propoxur now, click on the link below.

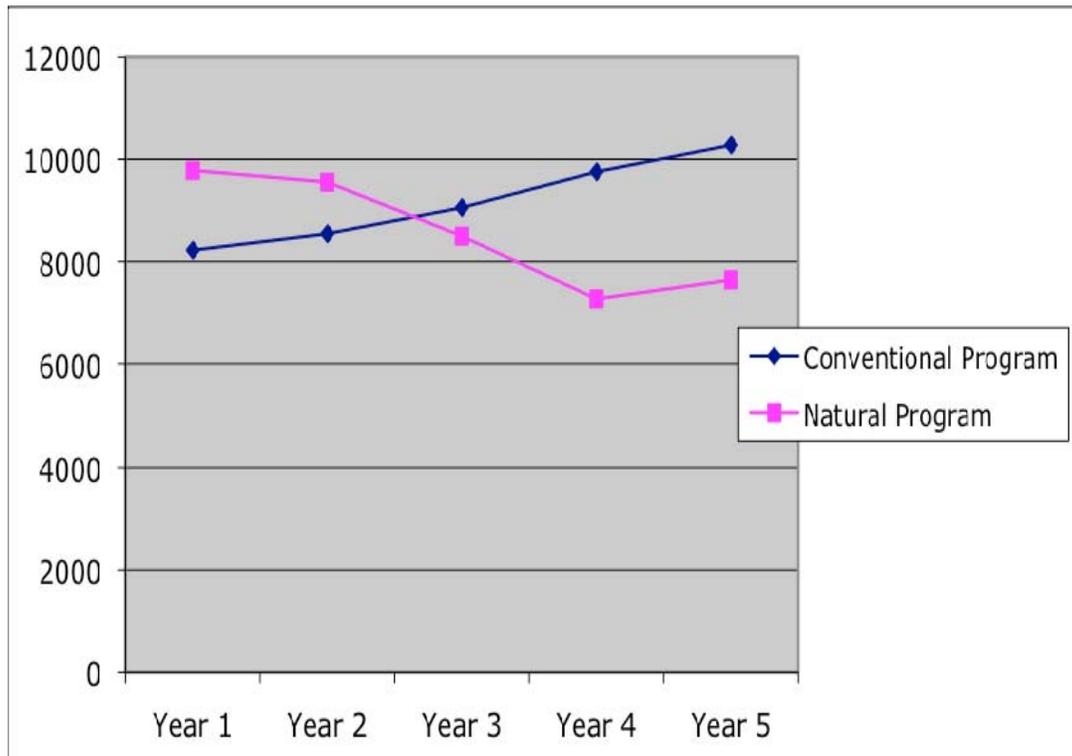
http://www.beyondpesticides.org/documents/Propoxur_EPAletter.pdf

Natural Turf Management vs. Conventional Turf Management: A Cost Comparison

Spring is the time of year when we begin to think about our yards and our gardens. Although the following information is based on a study presented as a comparison survey for school athletic fields, we believe the data can be adapted, scaled-down and applied to your facilities and your own yards.

The mounting scientific evidence linking exposure to pesticides with human health problems has increased the demand for non-chemical turf management solutions. One obstacle commonly cited by chemical management proponents is the purported higher cost of a natural turf program. The analysis of data demonstrates that once established, a natural turf management program can result in savings of greater than 25% compared to a conventional turf management program.

A Comparison of Costs for Conventional and Natural Turf Programs Over a Five-Year Period



Background: The widespread use of chemical pesticides to control weeds, insects and turf diseases began in the post-World War II era, when chemical companies sought to establish markets for their products in the agricultural, consumer and municipal sectors. By the mid-1990s, former New York State Attorney General Robert Abrams estimated that 87% of public schools in the state were using chemical pesticides on their fields.

Irrigation: Irrigation costs for turf maintenance are considerable, but are generally less for naturally maintained lands due to deep root growth and moisture retention by organic matter. Estimates of irrigation reduction for natural turf programs range from 33% to more than 50%. This analysis uses a conservative diminishing factor for irrigation reduction for the natural management program, starting with 100% in the first year as the turf gets established down to 60% in the third year and beyond.

Soil Biology: One of the most critical factors in the analysis – and the one most difficult to assess - is the availability and viability of microbiology on fields that have been maintained using conventional chemical programs. The microbiology that is essential for a successful natural turf management program can be destroyed or severely compromised by chemical pesticide and fertilizer applications.

Fertilization Costs: Once turf has been converted to a natural program and the percentage of organic matter has reached the desired level (5.0-7.0), additional significant reductions in fertilization costs can be realized using compost tea and other nutrients such as humic acid or fish hydrolysates applied as topical spray, rather than using granular fertilizers.

Conclusion: This analysis demonstrates that the cost of a natural turf management program is incrementally higher in the first two years, but then decreases significantly as soil biology improves and water requirements diminish. **Total expenditures over five years show a cost savings of more than 7% using natural turf management, and once established, annual cost savings of greater than 25% can be realized.**



Resources:

enjoy safe and cost effective organic lawn care

Osborne, Chip and Doug Wood. *A Cost Comparison of Conventional (Chemical) Turf Management and Natural (Organic) Turf Management for School Athletic Fields*. A report prepared by Grassroots Environmental Education. Presented at the 28th National Pesticide Forum, Cleveland OH. April 2010. Excerpted by permission of the authors.

The Baltimore Sustainability Plan and Pesticides: A Model for Health Care Facilities

Adopted and approved by the Baltimore Commission on Sustainability, the Baltimore City Planning Commission and the Baltimore City Council in February and March 2009 and published in April 2009, the **Baltimore Sustainability Plan** includes the following strategies related to pest management.

Section 4: Pollution Prevention, Reducing Risks from Hazardous Materials

Strategy A: Adopt the Precautionary Principle as the Underlying Policy Standard

Strategy B: Adopt a Policy and Plan for Elimination of Pesticide Use and Other Toxic Chemicals

Institute a policy in city-owned and leased properties and land to eliminate the use of toxic chemicals using such methods as Integrated Pest Management (IPM) and organic land care. The policy should embrace preventive, non-chemical strategies as a priority, define acceptable least-toxic chemicals to be used only as a last resort, and prohibit chemicals that are known to cause adverse health and environmental effects, including cancer, neurological effects, reproductive impacts, immune and respiratory system damage, and water contamination. Encourage IPM and organic land care for all hospitality-oriented industries including hospitals, elder care facilities, restaurants, and hotels.

Strategy C: Comply with the Maryland Integrated Pest Management (IPM) in Schools Mandate

Strategy D: Enact an Ordinance Prohibiting the Use of Known Toxins in Health Care Delivery Settings

Prohibit the use of toxins and chemicals designated as such by the U.S. EPA; the International Agency for Research on Cancer (IARC); the U.S. National Toxicology Program (NTP); and the State of California Proposition 65 in all health care facilities in Baltimore City. Promote the findings of Healthcare Without Harm and efforts of the Maryland Hospitals for a Healthy Environment (MdH2E) project at the University of Maryland School of Nursing and the Maryland Pesticide Network to all health care organizations.

Strategy E: Aggressively Promote the Redevelopment of Brownfield Sites

The Baltimore Sustainability Plan calls for the following methods to be utilized for short term and ongoing efforts in achieving its goals: legislative; educational; policy, planning and operational; federal, state, local, private sector and grant funding.

Are you aware of the **Baltimore Sustainability Plan**? What are your thoughts on the strategies? How would you implement an ordinance such as the one in Strategy D? If you have not read it, follow the link below to download a copy. Send me (Sharon Fried) an e-mail at sfried@beyondpesticides.org with your thoughts, comments and concerns and I will include your responses in the next edition of the newsletter. If you would like your responses printed anonymously, please let me know.



Resources: Baltimore Sustainability Plan. 2009. www.baltimorecity.gov/sustainability

Don't forget:



Baltimore Convention Center. May 11 – 13.

If you will be attending the conference, consider attending the IPM in Health Care Facilities workshop, Healthy Hospitals: Managing Facilities Without Toxic Chemicals, that features Jay Feldman, Executive Director of Beyond Pesticides and Rachel Demunda, Director of Environmental Health and Safety at Mercy Medical Center—one of our project pilot facilities, and Thomas Green, Executive Director of the IPM Institute of North America.

Also, please stop by our booth any day during the conference to introduce yourself and pick up any of our literature that you may not already have. We look forward to meeting you there!