

# INTEGRATED PEST MANAGEMENT IN HEALTH CARE



## SPRING 2009 NEWSLETTER

Welcome to the Spring 2009 Integrated Pest Management in Health Care newsletter, published by the **Integrated Pest Management in Health Care Facilities Project**, a partnership of the Maryland Pesticide Network and Beyond Pesticides in collaboration with Maryland Hospitals for a Healthy Environment. Through partnerships with leading "green" health care facilities across the state, the Project promotes and facilitates transition to defined, least-toxic integrated pest management (IPM) across Maryland's health care sector.

With spring here, this edition of the newsletter focuses on **Greening Your Land Care Program**. It also provides information on upcoming **IPM training** opportunities offered by the IPM in Health Care Facilities Project.

### ~ **FREE Integrated Pest Management Training Coming in June** ~

The *IPM in Health Care Facilities Project* will offer free IPM training sessions on **Monday, June 15<sup>th</sup>** from 8:30 am to 4:30 pm. The event will be hosted by the Krieger Foundation at The Associated, **101 West Mount Royal Avenue, Baltimore, MD**. Free parking will be available for the event

#### Program:

9 am - 12:00 pm -- Structural IPM: Tom Green, President, IPM Institute of N. America  
1:30 pm - 4:30 pm -- Natural Landcare: Chip Osborne, President, Osborne Organics

**Please RSVP by Friday, May 29<sup>th</sup>, 2009**

To RSVP or for further information, please contact Mike Boeck  
410-605-0095 or [mboeck@beyondpesticides.org](mailto:mboeck@beyondpesticides.org)

## Greening Your Grounds Care as Part Of Your IPM Program

### Feeding the Soil vs. Growing the Grass

There are many reasons why pest management is primarily understood as indoor/structural pest control. Most pest sightings and problems occur indoors, where people and pests usually come together. In addition, weeds and herbicides may not be regularly understood as pests and pesticides as part of a comprehensive integrated pest management program.

Just as your structural IPM program prioritizes sustainable, nonchemical prevention and intervention to minimize the hazards of pests and chemical pesticides in your buildings, an outdoor IPM approach that promotes and maintains soil health minimizes the adverse health and environmental impacts of grounds management by delivering effective weed, disease, and pest control without resort to herbicides, fungicides, and insecticides.

### The Conventional Turf and Landscape Management Cycle: Grow the Grass

Conventional turf and landscape management, with its reliance on quick release fertilizers and herbicides and fungicides for combating weeds and disease, can be seen as an annual (rather than perennial) program for green (rather than healthy) turf and grounds. Each year requires the same regime of synthetic and toxic chemical applications. In addition to offering little or nothing in the way of system improvement, the approach has very well documented adverse impacts on health and the environment, including:

1. **Nitrogen and other nutrient and chemical runoff**, a leading cause of water quality degradation in Maryland. This is a critical concern in the Chesapeake Bay watershed, but extends to every waterway. Under the conventional approach, regularly depleted soils require the 'nitrogen fix' offered by quick release fertilizers to support grass plant growth. These products are subject to surface runoff far more than slow release fertilizers.
2. **Exposure to herbicides and fungicides**. Most conventional programs rely on scheduled applications of pre-emergent pesticides for weed and fungus control, followed up with spot applications to cover what the pre-emergent failed to prevent. The approach is only meant to control weeds and fungus for the single growing cycle, with the program re-started each spring.
3. **Nontarget impacts of herbicides, insecticides, and fungicides**. The toxic 'unintended' impacts of chemical pesticides for weed, insect, and fungus control parallel the impact of fertilizer runoff in harming environmental health. Nontarget effects include increased human exposure to pesticide residues on grounds and chemical drift off the target site to nearby buildings. Products designed only for outdoor use are often tracked and detected indoors, especially in high traffic areas, increasing human exposure risk. Pesticide use also kills beneficial organisms such as natural predators that maintain ecological balance and can advance insect and weed resistance to the same used chemicals used for control.

## Breaking the Cycle: Feeding the Soil for a Better Environment

The goal of a natural turf and landscape management program is to create and maintain high quality turfgrass that is environmentally friendly and free from toxic chemicals. This is achieved by establishing and maintaining a soil profile rich in microbiology that is producing strong, healthy turf that is able to withstand insects, weeds, disease, drought, and heat stress.

Unlike a synthetic fertilizer/pesticide program, adequate soil microbiology is critical for uptake of the nutrients in natural fertilizers by grass and other plants for sustained grass and plant health. For this reason, a "feed the soil" approach replaces the "grow the grass" approach as the cornerstone of the turf and landscape program for natural resistance to pests and disease. Healthy soil also has demonstrated beneficial carbon sequestration effects, reducing global warming pressures.

Proper topsoil depth is a particular challenge for some institutions seeking to shift to a natural turf and landscape program. Healthy, sustainable grass and ornamental plants do best in several inches of top soil that supports healthy root stocks. However, construction practices and other circumstances often limit the availability of adequate top soil, especially for newer facilities. Conventional turf management seeks to overcome this challenge with annual application of synthetic chemical inputs that "over-deliver" nutrients to plants while killing off weeds. The success of the approach varies widely. Most soil feeding techniques (mulching, top dressing, etc.) also build soil depth, and one key strategic consideration for facilities adopting natural turf and landscape management is the time required to build soil depth, which will deliver sustained success.

## Six Steps to Natural Turf and Landscape Success

- 1. Develop healthy soil with proper pH.** This is achieved with regular (at least annual) soil testing and assessment for balancing pH and identifying needed soil amendments.

The first step for achieving soil health is regular (at least annual) soil testing to understand the soil condition and identify deficiencies. Apart from identifying the basic pH parameter and any need for balancing pH at or near 6.8 (through application of iron sulfate to high pH, alkaline soil or, more likely, lime to low pH, acidic soil), the test will identify the need for soil amendments such as bone meal for increasing micronutrients, calcium, magnesium and zinc. Testing also should cover organic material (OM) concentrations.

- 2. Plant well-adapted, pest-resistant grass varieties.** Select grass and ornamental varieties that naturally resist insects, fungal diseases, and fluctuations in weather. Planting is best done in the fall for superior results.

Grasses best suited to the climate in most of Maryland are "cool season" varieties such as Kentucky bluegrass, perennial ryegrass, fescues, and bentgrass. "Warm season" zoysiagrass may be suitable for the transition zone in the southern part of the state. Note that cool season varieties are active in the spring and fall and dormant in the summer, while the opposite occurs for warm season varieties – activity in the summer, dormant otherwise.

- 3. Select compost fertilizer.** Compost fertilizer formulations, ideally applied once a year (usually in the fall but subject to change based on soil test results), increase the efficiency of nutrient uptake, reduce nutrient runoff and leaching, and increase the water-holding capacity of the soil.

Slow-release compost fertilizers (with low or zero phosphorus content) are selected. While generally speaking there is a tradeoff in nitrogen concentrations when selecting compost fertilizers, the market for these products continues to grow, with their success demonstrated in a variety of settings.

- 4. Adopt proper management practices.** Practices such as dethatching, aeration, and topdressing increase soil performance and reduce susceptibility to insects, disease, and weather stress.

Dying, matted grass thatch on the surface prevents air, water, and fertilizer from reaching soil. Dethatching removes the problem and promotes decomposition rather than accumulation of grass clippings. Aeration reduces compaction, thereby promoting air exchange in soil and allowing water and nutrients to reach plant roots. Top dressing with 1/8"-1/4" of composted material is should be applied as needed to maintain OM concentrations of approximately 5%.

- 5. Adopt proper watering methods.**

Watering procedures should wet the soil to the depth of the grass root zone, allowing soil to become dry before the next watering and eliminating more frequent, shorter waterings which promote shallow root systems.

- 6. Mowing.**

Mowing with sharp blades set to 3" minimizes adverse effects and retains the lawn's competitive ability. A single mowing should never cut off more than 1/3 of grass blades in a single mowing, rotating the mowing pattern to reduce lawn compaction, and leaving a light layer of grass clippings on the grass, which can provide up to half the lawn's nitrogen requirement. Stressed or dormant grass should not be mowed.

### Information and Resources

The National Coalition for Pesticide-Free Lawns offers a comprehensive resource for healthy lawns and landscapes at [www.beyondpesticides.org/pesticidefreelawns/resources](http://www.beyondpesticides.org/pesticidefreelawns/resources)

The Northeast Organic Farming Association's Organic Turf and Lawn Handbook is available at [www.organiclandcare.net/publications](http://www.organiclandcare.net/publications)

Safety Source, a resource for identifying and working with IPM service providers maintained by Beyond Pesticides can be found at [www.beyondpesticides.org/safetysource](http://www.beyondpesticides.org/safetysource)