



Ecological Pest Management

Embracing the organic approach to landscape management

By Stephen J. Restmeyer

With an increase in public concern over possible adverse health effects of pesticides, more consumers are taking a stand against the use of all pesticides. After all, consumers, farmers and pesticide applicators were told that DDT, chlordane and dieldrin were safe as long as they were used according to the directions. These chemicals have since been banned due to their adverse health effects and their inability to break down in the environment. Unfortunately, they were not banned before they killed millions of birds, some almost to the point of extinction, countless pets, and contaminated soil and water. In fact, DDT is still found in human tissue today. What the last 50 years of chemical use have taught us is that if it is a poison, then we can be poisoned by it.

What scientists have also proven is that the use of non-target sprays that are applied as a blanket application do more harm than good by creating an imbalance in the ecosystem. The term “pesticide induced infestation” refers to the condition created when good bugs are killed. In the absence of beneficial insects, pest insects flourish unchecked, creating an infestation that is often more severe than the original one and a “need” for another spray to control it. Unless, that is, you adopt an Ecological Pest Management (EPM) program.

The good news (what a relief!) is that there are safe and very effective alternatives to poisons for pest control. How-

ever, a more wholistic approach is necessary for a comprehensive EPM program to be successful. The three major components of a well-engineered EPM program are:

① **Proper soil nutrition and pH** is essential for plants to stay healthy. Soil requirements for different types of plants vary largely according to the plant’s origin. Did it originate in the forest? Or a prairie? Or mountain ranges? Designing gardens with ecosystems in mind will help to simplify the process.

Prairie soils are very deep and when preparing a garden for this type of plant the soil should be worked deeply. Add ash or lime to simulate the neutralizing property of ash from annual prairie fires.

Forest soils are shallow. Therefore, when planting trees do not work compost into the deepest part of the planting hole. Lack of sufficient air exchange in the deeper part of the soil will cause excessive organic matter to break down through an anaerobic process, causing stress to root tissue and encouraging pathogenic microorganisms to thrive. Plants like birch and mountain laurel, which evolved in mountainous ecosystems, may require more mineral content.

In almost every situation, adding compost or earthworm castings, colloidal minerals, and soil inoculants will help build a healthy soil structure. In newer homes, or where construction vehicles have damaged soil, deep root feed-

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ing with compost tea may restore soil structure. The microbes in the compost improve soil structure and thus improve water absorption and air exchange. Think of how adding yeast to dough makes bread spongy, as opposed to non-leavened bread, which is hard and brittle. This is how microbial inoculants work to develop soil structure. Simply put, healthy soil grows healthy plants, and healthy plants are less likely to get sick.

② By releasing beneficial insects and providing them with breeding habitat,

you will add to the diversity and ecological balance and thus control most pests before they reach infestation levels.

Many beneficial insects are available through garden centers.

The most available are ladybugs, preying mantises, trichogramma for gypsy moth control, lacewings, insect parasitic nematodes, and fly parasites for control of breeding flies in stables and kennels. Some of the less common but still available insects include predatory mites to control mite pests, aphid midge for woolly adelgid control, leaf miner parasites and so many more that there is not enough room here to mention them all. Ask your garden center manager if they can get what you want since many beneficial insects have a short shelf life and must be ordered when needed.

③ Bird nesting sites provided by plantings and by birdhouses properly placed

will keep the birds where you want them when they're hunting for insects to feed their young. Nesting birds will help to keep insect populations down in the early part of the growing season and leave fewer adults to breed later in the season so that the next generation of insect pests will start out with a smaller population. A nesting pair of chickadees will require over 2000 insects per day to feed their family. Nesting boxes also provide daytime shelter for nocturnal mammals such as flying squirrels and bats, voracious mosquito eaters. I have seen

Little Brown Bats claim a Bluebird house while a bat house 50 yards away remained unoccupied. Proper placement is essential. Use common sense when selecting a location. Never place a birdhouse in the sun unless it's a Purple Martin house. Avoid windy locations. Don't overcrowd any area with too many birdhouses. An unoccupied birdhouse may need to be repositioned in the landscape. Also keep in mind that different species nest at different heights so place birdhouses accordingly.



Biodiversity is the key.

Plant diversity supports a diversity of beneficial insects and birds that will patrol your garden for insect pests all day every day. Look for a landscape maintenance program that keeps pests in check with only minor annual adjustments and regular monitoring.

EPM brings together the traditions of the past with the innovations of modern science. When we adopt these practices, we cease battling nature and instead strive for balance in the garden, returning to the concept of gardens as peaceful, sacred places where chemical warfare just doesn't fit in.

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Stephen J. Restmeyer is owner of Eco-Logical Organic Landscaping and President of Long Island Organic Horticulture Association (LIOHA) in New York. In addition, he is host of Organic Land Care, a video to teach homeowners how they can convert from a chemical to an organic program to maintain their lawn, trees and shrubs. He has worked with breast cancer and environmental groups to educate

the public on non-toxic alternatives. He has also rewritten the lawn care specification for the Suffolk County Water Authority and provided lawn care for ten of their properties. Mr. Restmeyer can be reached at P.O. Box 9, Yapank, NY 11980, (516) 345-6040. His video is available for \$25 ppd. Visit www.ecologicalandscaping.com.