

Organic/synthetic product mix based on soil nutritional needs

Use synthetic control products and natural organics together for one goal: soil nutrition.

by Mark Nuzum

■ It may seem like a contradiction: using a chemical pesticide with an organic fertilizer, but it all depends on what you're trying to accomplish.

Certainly, chemical control products have no place in a 100 percent all-natural program, but few turf professionals have the opportunity—or patient customers—to follow that philosophy.

Many professionals will avoid incorporating organic fertilizer products into their current programs because they will still be using pesticides. There seems to be a common misperception that in order to use organic fertilizer products, you must change your whole way of doing business. Banning organic inputs because chemicals are being used has no sound agronomic basis at all. In fact the people who are using chemical pesticides may need organics even more.

Even though the goal of Integrated Pest Management is to gradually reduce the use of pesticides, they are a realistic part of turf care programs, necessary for an acceptable stand of turf.

The problem with pesticides—especially fungicides and insecticides—is that they drastically affect soil life, decreasing its natural ability to withstand pest problems. Therefore, bad soil leads to more susceptible turf, which must be treated again, bringing on a cycle of problems. We turn to artificial maintenance products when the soil alone can't sustain the plant. Each of these products or practices can also have negative effects on the soil environment, thus perpetuating the need for more artificial support.

Organic fertilizers play an important role when pest control products are used. They help to rebuild the soil and create an environment more resistant to pests and

disease. A big advantage of using organic materials to feed plants is that they do stimulate the activity and populations of living macro and micro-organisms. On the other hand, there is evidence that certain pesticides damage these same beneficial populations. Since this is the case, shouldn't our thinking be that when pesticides are used, organic inputs are essential to help rebuild and restore any detrimental effects the control product may have had on the soil?

Another factor to consider: what product is used to accomplish the pest control with minimal impact to the soil system. University tests have shown that some pest control products impact soil organisms much more than others.

Frequency of application is also an

important factor. If application of a low-impact pre-emergence product can prevent single or multiple applications of a post-emergent, the turf environment would be better off in the long run. Spot treatment of only those areas with a problem also reduces over-use.

Avoidance of chemical control products to achieve 100 percent natural organic programs has its philosophical, idealistic arguments, but not everyone can completely avoid pesticides. Yet, no one should avoid organics just because pesticides are used.

—The author is president of the Plant Products Division of Harmony Products, Inc., Chesapeake, Va.

Understanding soil structure

To understand and discuss organic fertilizer clearly, we must first understand the soil itself.

This complex, living environment is the most important factor affecting a plant, and the most important aspect of an organic-based turf care program. When the soil is in good condition, it is capable of supporting plants well. The soil is a thriving environment, a living system with food chains and checks and balances.

For example: the earthworms aerate the soil and create channels for water distribution and root growth. Bacteria and fungi are also needed for good soil balance: they break down organic and mineral nutrients; beneficial nematodes, bacteria and fungi help keep turf-damaging nematodes, bacteria and fungi in check.

The soil's condition and its ability to carry out its functions correlates directly to the health and vigor of the plants growing into it.

When the soil functions are decreased for any reason, the ability to support a healthy plant is also diminished. Poor soil conditions include compaction, low moisture retention, low microbial activity and low soil nutrient-holding capacity. When the soil is poor—which may be due to natural conditions or the overuse of chemical pesticides and fertilizers, artificial means of support are needed (irrigation, aeration, fertilization and weed/insect/disease control products) as a short-term solution.

We must focus on improving the soil by feeding it. Soil functions require energy sources because soil functions are carried out by living organisms that require energy. Fertilizers should contain energy-rich organics to support the soil life that will in turn make slow-release nutrients available to the plants.

—M.N.