

# naturalgardening

## Environmentally Friendly Lawn Care—Part I

By Peggy Malnati

Spring is a great time to review lawn-care practices. Often, by making a few simple changes, we can reduce work and maintenance costs, while improving the health and beauty of our lawns with minimal (or no) chemical inputs. Over the next 3 months, we'll review the fundamentals of environmentally friendly lawn care, including understanding the plant; building healthy soils; fertilizers and pest control; watering; and mowing.

### Understanding Turfgrass

Our lawn's turfgrass originated in the tropical rainforests of SE Asia. Reviewing conditions in this habitat will help us better understand what makes Michigan lawns succeed or fail. Tropical rainforests have a warm, wet climate. It rains almost every day, but gently, not the periodical inundations our seasons bring. Hence, turfgrasses evolved with frequent light watering. The soils they grew in were loose and rich in organic matter. Turfgrasses evolved short roots, since both water and nutrients were plentiful in the rich, damp soils. Also, they grew in dappled light, not blazing sun or deep shade.

Our (sub)urban Michigan yards offer drastically different conditions from those in which turfgrass evolved, with our temperature extremes and



wide fluctuations in rainfall. Our soils tend to be heavy clay or drying sand – neither with much organic matter in them. We often put lawns in full sun or deep shade, rather than the light shade in which they do best. We've mistakenly been taught to hydrate turfgrasses by dumping large amounts of water on them infrequently –too much volume for their short root systems to absorb and store at once, and not given often enough to reduce summer heat stress. No wonder our lawns suffer and we find ourselves forced to treat them for pests and diseases. The more closely we can match the environment turfgrass evolved in, the happier, healthier, and more beautiful our lawns become.

### Start with the Soil

Healthy lawns begin with healthy soils. Soils are the foundation of gardening and perform many important functions, like structurally supporting plants, protecting water quality (via filtration), and sustaining entire ecosystems. Unfortunately, soil is often degraded by urban development practices. Healthy soil contains:

- Mineral nutrients – essentially vitamins for plants and soil organisms,
- Organic matter (humus) – decaying plant/animal matter that is recycled to nourish living plants and soil organisms,
- Water and air –held in pore spaces between soil particles and vital for plant roots and soil organisms,
- Micro- & macro-organisms – bacteria, fungi, insects, and other animals that cycle nutrients by breaking down

organic matter.

There's an incredible amount of life in healthy soil – as much as 4-billion microorganisms/tablespoon. Without these organisms, soil cannot support plant life. In turn, these organisms are sustained by decaying humus, which they transform into nutrients that plants can use. This is the soil web of life.

To have a healthy yard, focus first on the soil. Begin by getting a professional soil test done by MSU. Soil-test boxes are sold at many garden centers. Results tell your soil's pH, any missing macro- or micro- nutrients, plus the % humus in your soil. These results help you know if your soil needs amending to improve plant health.

Healthy soils have at least 5% organic matter, which not only nourishes plants and organisms, but also loosens heavy clay and helps sandy soils retain water. Most urban/suburban lawns are low in organic matter, so amend them every few months with compost and humic shale (a fossilized form of compost). Both supply trace minerals and other nutrients for plants and soil organism, plus bind heavy metals and salts (from excess fertilizer) and other pollutants, which soil microbes can then digest.

If soil is compacted or heavy clay, core-aeration once/year in the fall will improve permeability and speed penetration of compost and shale into the soil. This takes us one step closer to loose rainforest soils.

If soil pH is excessively acidic or alkaline, microbial activity will be compromised and nutrients will not be bioavailable to plants. Soils in SE Michigan tend to be alkaline, but can be made more neutral by adding sulfur.

Building healthy soils is one key to healthy lawns. Next month we'll look at fertilization and pest control, and in July we'll cover watering and mowing. Until then, happy gardening!

*Peggy Malnati is an Advanced Master Gardener, as well as a Master Composter and Master Recycler. She's also a life-long organic gardener and a frequent lecturer around the region on healthy gardening practices. She can be reached at p.malnati@sbcglobal.net.*

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