

Healthy Lawn Care

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After this region's snowiest winter on record, take heart: we are about to thaw into spring! Past articles illustrated how any verdant native garden increases wildlife habitat. Added benefits to expanded gardens and smaller grassy areas include less time wasted mowing lawns, reduced air pollution from lawn mower emissions, and decreased water pollution from runoff carrying lawn chemicals (see www.audubonva.org/index.php/environmental-education/eco-friendly-landscaping). This time, let's take a closer look at lawns.

One important, but often overlooked fact, is that the common lawn grass in Northern Virginia, tall fescue (*Festuca arundinacea*), is a Northern European native. It loves growing in full sun; people with heavy shade lots should consider replacing perpetually dying lawns (especially if shade-tolerant grass strains are lost) with low light native gardens and shrubs. Tall fescue is a cool weather species, and dislikes growing in hot, sticky mid-Atlantic climates. As a result, people end up pampering lawns with excessive chemical treatments and over watering, but there is a better way to nurture grass. Instead of doping the grass with synthetic chemicals, nourish a thick, green lawn with compost teas. Compost is organic material decomposed by fungi, bacteria, worms, and other tiny critters. It is a dark brown, crumbly material that pleasantly smells earthy, like a forest after a spring rain. Anyone can make compost in their backyard from yard debris (leaves, grass clippings, kitchen scraps) or commercially from forest product wastes, yard debris collected by municipalities, or farm waste materials (composted cow manure). Compost tea is a watery solution of this compost which is further broken down by microbes; during the "steeping" process, pumped air oxygenates the tea to help the right bacteria grow. When properly made, a safe, pathogen-free (e.g., without *E. coli* and *Salmonella*) final product is ready for spraying onto lawns and gardens. These teas have a proven record at heavy traffic places, from Battery Park City in lower Manhattan to the Yard at Harvard University to residential properties here in Northern Virginia.

If you truly want to give your grass a boost, apply compost tea to the ground so that the soil colonizes with beneficial microbes. These organisms attach to plant roots and facilitate the plants' nutrient uptake. As these microbes spread into tiny spaces between soil particles, the soil loosens. That's right, between the bacterial activity and natural ground shifts (such as freeze-thaw cycles and soak-dry cracks), you can say "good-bye" to mechanical aeration! After several years of regular application, soil structure alters so that grass roots easily penetrate to a ten-inch depth compared to three inches in conventional lawns. Long and healthy root systems enable grass to retain moisture much longer during droughts (reducing water bills), efficiently store nutrients, and survive harsh winters better than the lawns with compacted roots. The healthy grass then crowds out weeds. As an added benefit, the deep, loose soil absorbs more rainfall, thereby reducing the surges eroding streams with every heavy rain. Some seed companies are onto the magical microbes' secret and sell seeds inoculated with bio-coatings.

These dramatic physical soil changes occur over time, so you will appreciate the full long term benefits of switching to an entirely organic compost/compost tea regimen of lawn care in two to three years. In contrast, unless applied with constant aeration, synthetic chemicals fail to adequately penetrate the soil—much of it washes off with rain. Furthermore, spring applications of synthetic fertilizers merely stimulate grass growth and encourage shallow roots—like expecting an athlete to perform on a steady caffeine and sugar intake instead of a healthy, nutritious diet.

Maintaining a lawn with compost teas is easy. Spraying the yard (one gallon per 1,000 ft²) with the tea at least twice a year—spring and fall—takes about the same time as normal fertilization. Since compost teas act differently than synthetic chemicals, the adage, "Fertilize in the fall if at all," does not apply here. To feed the soil microbes and keep them healthy, a periodic application of compost to the soil surface is essential. Mulch grass clippings and some autumn leaves back into the lawn—a great practice for any lawn—instead of bagging them on the curb and losing the nutrients. The biological activity in organic lawns makes thatching obsolete; soil organisms (which artificial chemicals suppress or kill) readily gobble up dead grass.

Except for lime applications every three or four years in Northern Virginia's acidic soils, any additional chemical fertilizers are unnecessary. Would you like to double check the soil's pH and chemistry? A quality soil test costs only \$10.00, plus postage. Simply dig some soil samples from a couple of areas in your lawn, mix them together, and dry them. Then, mail the mix to Virginia Tech's soil lab. In about two weeks, you will have the results. You can obtain a soil test mailing box at your local library or Extension Agent's office; see <http://www.soiltest.vt.edu/> for details.

Compost tea is available at specialty garden centers, such as American Plant (<http://www.americanplant.net/index.html>), and it costs much less than a high quality slow release fertilizer. To ensure a completely safe product, their manure-free tea is specially made from plant-based compost and is subsequently checked for pathogenic microbes. Watering cans help apply the tea on target plants; for fast, broad application, attach a garden hose to a sump pump, drop the pump into the tea bucket, and turn on the pump. Dial sprayers and tap water do the job but the chlorinated water might kill some of the microbes. Spray on days when the winds are calm. How'd you like to reduce black spot on rose leaves and powder mildew on other plants? Compost tea applied frequently to foliage creates a healthy bio-coat, which reduces diseases attacking the leaves, acting similarly to the biofilms on our own skins. Due to the manufacture process and testing, American Plant claims their tea may be applied to food crops, but if you feel uncomfortable with that practice, restrict tea treatment to the soil. If the tea needs dilution, rain water or some other non-chlorinated source is preferred, but tap water is another option. Never use sprayers previously dedicated to synthetic chemical treatments.

Do you have lawn service and wish to continue hiring workers to maintain the yard? Make sure that they have your best interests at stake! Some companies now offer composting instead of synthetic fertilization. If you stay with conventional approaches, ask how necessary the treatment is before they zap your yard with chemicals. Did they test the soil to know what nutrients were depleted or are they bombarding your lawn out of habit and to waste your money? Are they even applying the treatment on a thawed lawn? Some companies spread lawn chemicals on snow-covered ground—good luck with nutrient or pre-emergent absorption through rock-hard frozen soil! In addition to applying chemicals at the wrong time of year or overdosing the lawn, some companies shoot chemicals several feet into the street and other paved surfaces—sending pollutants and your money down the drain. Other dubious practices impairing water quality include blowing clippings and yard debris down storm drains, or allowing motor oil to slosh down the curb and into the storm sewers. All of these infractions were committed by various commercial companies operating within KPW! Fortunately, other lawn businesses care about the environment to voluntarily implement landscaping practices to improve soil and water quality. Some of these corporations already work on KPW properties, advertise in *The Herald*, and appear on this website: www.dcr.virginia.gov/soil_and_water/documents/wqagree.pdf. Your lawn care company is not on the list? Talk to them about it or show them this article. If you own a landscaping business and are not yet on this list, would you consider adjusting your practices towards reduced environmental impact and joining the group? A path towards greater sustainability is the road to the future, so get a jump on it: demonstrate the healthy commitment to your customers and win over new, eco-savvy clients!

Whichever way home owners approach organic teas and sustainable lawn care, an option is available for you. For further reading and additional links, check out the following resources:

Brooklyn Botanic Garden. 2001. *Easy Composting: the Secret to Great Soil and Spectacular Plants*. Brooklyn Botanic Garden, New York. pp 112.

http://www.soilfoodweb.com/sfi_approach1.html

<http://www.uos.harvard.edu/fmo/landscape/organiclandscaping/>

Raver, Anne. 2009 (October 27). The grass is greener at Harvard. *New York Times*:

http://www.nytimes.com/2009/09/24/garden/24garden.html?_r=2&sc=2&sq=harvard&st=cse

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