HOME GROUNDS FACT SHEET

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Organic Lawn Care

The success of sustainable turf quality without chemicals relies on excellent growing conditions and use of cultural controls to minimize many turf pests. Organic lawn care begins with adjusting the soil. Proper adjustment of the pH means fewer diseases, improved nutrition and better soil for better root health.

pH

Soil pH is a measure of acidity/alkalinity in the soil. The level of acidity/alkalinity is very important. Some nutrients are not available to the grass if the pH level is not in the proper range. The best level for your pH is 6.3-6.8, or at least in the range of 6.0-7.5. Although the grass will still grow outside this range, there will be adverse effects on nutrient availability, soil microbes and soil structure. Soils with a low, or acid, pH will need lime to raise the pH. Only a pH test can tell you if you need to apply lime and how much to apply. Proper pH encourages earthworms, a strong indicator of a healthy soil.

Texture

Soil is composed of sand, silt, clay and organic matter. Organic matter and clay help soil hold water and nutrients. Organic matter is the most important component in sandy Long Island soils for providing proper drainage and holding water and nutrients. Most soils benefit from additional organic matter. Amend soils with fibrous compost rather than additional sand or clay to improve drainage and improve retention of nutrients. Peat moss is not the best choice because most peat moss makes the soil more acid while compost tends to neutralize the soil. Leaving clippings on the lawn also helps to give back organic matter to the soil as does mulching in finely shredded leaves. Organic matter provides a food source for beneficial soil microorganisms and improves soil health.

To be successful, organic lawn care must follow proper mowing, fertilization and irrigation strategies. Mowing too low or improper irrigation can result in disease, weed and insect problems.

Mowing

The leaf of the grass is used to store food and manufacture more food through photosynthesis. When we maintain grass at less than 3 inches it can result in a shortage of food for the root system. This causes some roots to die so that some of the leaves no longer get enough nutrients and water. Therefore, the turf thins out and weeds appear. The best thing for your turf is to maintain a three inch mowing height. For every 1/8" the mower blade is raised, you'll get a 30% increase in leaf surface area meaning more food, and more food storage. It also means more densely growing turf that conserves moisture and shades out weeds. Return clippings: they are free or recycled nutrients and free organic matter for soil improvement.

Irrigation

If you already have an irrigation system in place, learn how to use it correctly or your lawn will suffer. The environment could also be harmed by excessive leaching. Improper irrigation could be contributing to your disease and insect problems or turfgrass stress. The best management practice is to apply irrigation based on the amount the plant uses and rainfall received. Apply 1-1.5" water/week (less the amount of rainfall received) for established turf on a ***deep and infrequent basis***. Irrigation should moisten soil to about a five inch depth. Organic maintenance lawns ideally should not be irrigated. Allow turf to naturally become dormant during dry spells. Turf can be seriously weakened by almost allowing dormancy then watering to bring back green color at the last minute. Let natural rainfall break dormant periods in the organic maintenance lawn.

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Fertilizing

Organic lawn maintenance means fertilizing with slow release, 100% natural products or not fertilizing at all. Older, dense lawns can be fertilized less, but younger ones may need more to look good and have fewer weeds. If your soil is in good condition and the pH is in the right range (test soil to be sure) you may be able to do with only 1-2 pounds of actual nitrogen or less per 1000 square feet/year. Apply in late May and again in September. Remember to soil test to match the fertilizer with nutrient needs since many natural organic fertilizers are have high levels of phosphorus and low levels of potassium. Compost also supplies nutrients, including nitrogen, to turf.

Choose Grasses for Site Conditions

Remember, grass needs sun. Grass needs at least four hours of sun to survive but 6-8 hours to thrive.

- **Fine fescue**: the best choice for dry, shady or sunny acid sites with little foot traffic.
- **Tall fescue**: the best choice for all around low maintenance because of its deep, fibrous root system.
- **Roughstalk bluegrass**: For consistently wet shade, try this or try a mix of this grass with other types of shade tolerant fescue.

Special Recommendations

- For a worn or diseased area in full sun, use perennial rye as a quick fix. Perennial ryegrass cannot survive at all in shade, so do not use in the shade.
- Use Kentucky bluegrass as a low percentage of grass components in seed mixes. It will help to patch holes by filling in laterally.
- For all seed, freeze it for 48 hours prior to seeding to crack the seed coat and thus speed germination.
- If desired, add some white clover to any seed mix to get darker green lawns from the nitrogen made available from the clover.

Disease Reduction

Core aerate soil, then topdress with ¼" of compost to reduce compaction and thatch and to improve drainage. Increase air circulation by trimming back tree and shrub branches to improve air flow. NO light/frequent irrigation. Use composted poultry and plant meals in areas where disease is prevalent to encourage microbial competitors with disease organisms and to improve soil structure for better air and water exchange. Whenever possible, use disease resistant varieties or endophytically enhanced varieties of grass.

Insect Reduction

Use perennial ryegrass, fine fescue or tall fescue seeds that are endophyte enhanced. Endophytes are good fungi growing within the seed and grass plant. The endophytes can confer resistance to chinch bugs and sod webworms. Keep seed refrigerated to preserve endophytes. ***Do not*** use endophyte enhanced seed in a pasture. Reseed areas damaged by grubs. Grubs attack at the time of year for renovation anyway, or keep turf well watered and new roots may grow in again. Grubs will not be evenly distributed through out your yard. They will exist in "clumps." You can find out where you have clumps by sampling your yard in a grid pattern every 10 feet or so. Take out a small area of sod and earth (3" x 3"), break it up, and count the number of grubs present. Anywhere you have two clumps side by side with one or more grubs, you have a potential hot spot. The likelihood of grubs is greatest with less than 30% shade and greater than 60% Kentucky bluegrass. Leave ants alone. They are excellent predators on turf pests.

Weed Reduction

Increasing weed pressure from year to year can simply mean there may be not enough water, increasing shade from a growing tree, a problem with pH, mowing too low, a lack of nutrients or a combination of these factors. Any or all can contribute to a thin turf and consequently more weeds. The best deterrent to weeds is a thick, healthy lawn. Weeds in the clover family occur in response to high phosphorous, drought or poor nutrient levels. Sheep sorrel, moss and hawkweed mean a low pH. Other weeds like plantains and prostrate knotweed indicate compaction and spotted spurge is a weed favored by drought. The thicker your turf, the less likely weeds will be an issue.

Some Common Products Used in Organic Turf Programs

Composts

Organic matter in compost includes simple sugars, amino acids, polysaccharides, proteins, and humic and fulvic acids. Additionally there are plant fibers which are not fully broken down which help to maintain soil structure. It also contains other nutrients used in the growth of plants. Compost is the best soil amendment because of its structural and biochemical properties.

Compost Tea

Research showing response to compost tea applications is limited. Compost tea is a term loosely applied to several different products. Compost leachate is a dark colored solution that leaches out of the bottom of a compost pile. Compost extract is a watery extract obtained by soaking compost in water. Aerobic conditions are ***not*** necessary to produce compost extract. A true compost ***tea*** is a watery extract brewed with a microbial food source and production of this ***must be aerobic***.

Biostimulants

Research showing response to biostimulants is limited. A biostimulant is any material which is neither a fertilizer nor a pesticide but will enhance the health and growth of the plant to which it is applied. Many of the currently marketed products include plant hormones extracted from kelp, humic acids, fulvic acids, amino acids, and vitamins.

Corn gluten meal

Corn gluten meal products are gaining in popularity as an alternative to traditional pre-emergent herbicides. However, at the rate recommended, they provide a whopping 2 lbs of actual nitrogen /1000 square feet. This is undesirable because the nitrogen tends to be broken down all at once as soils warm providing a burst of fertilizer that has the potential to benefit either weeds later in summer or be washed out into water sources by irrigation or storms. Routine fertilization at rates recommended can provide the same effect of thickening the turf thus excluding bare areas for crabgrass germination. If you wish to use corn gluten meal, consider using it at half the recommended rate to reduce the chances of leaching once the product is broken down.

Milky Spore

Long Island primarily has infestations of ***Oriental Beetles***. Commercially produced milky spore will not affect oriental beetles and therefore it is not recommended as being very effective.

Alternatives to a Lawn

Instead of struggling to grow grass in a poor environment, why not concentrate your efforts on a room sized square of grass in the best and sunniest location surrounded by forgiving and low maintenance flowers and foliage?

Begin With the Soil

Test the pH of your soil and incorporate organic matter in the form of compost. Remember that a 4-6 inch layer of organic matter such as well rotted manure, compost, leaf mold or other should be worked into soil before planting. Never layer materials on top of one another without incorporation. This can result in drainage problems.

Perspective Makes the Difference

To get an idea of how perennial plantings and shrubs will plantings will look together as a substitute for lawn, try overturning trashcans or similar objects of various sizes and grouping them around the yard where you intend to remove grass to see what kinds of heights work well or use pieces of hose laid out in the approximate mature size of the plants you are thinking of.

Think About Conserving Water

Overhead irrigation for turf may cause disease when applied to the foliage of flowers and shrubs. Opt for drought tolerant plantings that require only the occasional watering or no water at all except for natural precipitation. Some great choices include daylilies, bulbs, grasses like *Miscanthus* and *Panicum*, *Veronica*, rose mallow, catmint, candytuft, cranes bill, bleeding hearts (good for deep shade), wand flower, Shasta daisy, calamint, yarrow, Japanese anemone, purple and white liatris, liriope, wood spurge, ornamental grasses, lamb's ear, hostas, Lychnis and black eyed Susan. Try shrubs like ninebark, glossy albelia, shrubby St. John's wort, spirea and *Indigofera kirlowii*, flowering raspberry, beauty berry, kerria, Chenault coralberry, butterfly bush, weigela, Lespedeza and viburnum. There are many excellent plants. Consult your local extension office for other choices.

Think About Conserving Fertilizer

Perennials and ornamental grasses need very little fertilizer. Generally, the fertilizer used for the turf is enough to provide sufficient nutrition provided the pH is in the correct range. Excess fertilizer can also inhibit flowering. Reducing fertilizer applications also helps the environment.