

# **Simple Steps Towards Organic Lawn Care**

**~ Spring ~**

**A Living Lawn...**  
*A Lawn for Living*



**Assess Your Lawn**  
**Clean Up**  
**Soil Test**  
**Aerate/De-Thatch - if Necessary**  
**First mow ~ Remove clippings**  
**Amend Soil as per Soil Test**  
**Seeding**  
**Top Dress with Compost**  
**Mow Properly**  
**Weed Management**  
**Insect Management**  
**Disease Management**  
**Summer Lawn Care Review**

***The goal throughout the Simple Step process is to nurture a microbe and nutrient-rich soil system in which to develop a deep-rooted, dense turf that competes successfully with weeds, and is low-maintenance, drought, insect and disease-resistant - and beautiful***



### ***Timing is Everything***

**Please, keep off the grass!** Depending on what sort of winter we had, it's important to take your time before you begin working on your lawn. A hard winter, with lots of melting snows, means come spring the lawn is going to be pretty soggy. Stay off it, until it dries out. Walking on wet soil causes compaction and stops water, air, and nutrients from reaching the roots.



### ***Assess Your Lawn***

Now is the time to take a look around at your lawn and starting thinking of it as unique-because it is. All its requirements for nutrients/water/maintenance are **SITE SPECIFIC** to *your* property - sun/shade/drainage/soil - as well as what sort of grasses you have growing there; what weed problems you may have established in your lawn, etc. You have your own ecosystem in which you are trying to grow grass. It makes sense to try to understand what that means in order to take the best steps towards establishing the kind of lawn that you want. We've been led to believe by the chemical lawn care companies that there are 4 steps (chemical of course) that suit *every* lawn's every need, season after season...NOT TRUE!

Most people's lawn needs change over the years. Ask yourself what do you and your family use your lawn for the most? Ask yourself how much lawn do you really want or need? Do you enjoy working on your lawn - or hate it? Do you mind paying for lawn care programs or would you like to cut back on the amount of "care" - and cost - your lawn requires? What is your water bill like and how much of it goes to a thirsty lawn? Where is it sunny or shady? Where is it thriving? Where is it suffering? What problems are you having? Are the problem areas due to

in that area?

Perhaps now is the time to stop growing grass right up to the trunk of that tree you have in the lawn and put in ground cover or mulch around it instead. Or take over a piece of turf for a perennial bed or a vegetable patch. Grass can be a beautiful compliment to your landscape, a thick velvet path to wander around the rest of your garden/property on...BUT it doesn't need to be the dominant plant in it. A lawn is a mono-crop...a lack of diversity in your home landscape is an invitation to pestilence - so give some thought to balancing the amount of lawn you have with other plantings to both beautify your property and support the health of the lawn you do choose to maintain.



### ***Keep a Lawn Care Journal***

Some people keep gardening journals for their flowers and vegetables. Why not keep one for your lawn care program? It can serve as a reminder of "Things to Do" and "When to do Them", jogging your memory each season about what worked and what didn't; and give you a place to record your thoughts and ideas for the future care of, or changes to, your lawn. Whatever role it serves for you, there are a few components that should be in every lawn care journal:

A rough drawing of your lawn(s) - front, side, back (they can all be quite different), making sure to include anything that might impact your lawn's health, i.e. shade-producing trees or shrubs with competing root systems; areas of heavy traffic; wet or dry spots, out-croppings of ledge, etc.

Dimensions of each lawn will be helpful when figuring out how much fertilizer and lime and other amendments you will need to apply. A place to record soil test analysis results...and what you did about the recommendations on the test, including products used, names, place of purchase, price, etc.

The largest section of your journal should be reserved for summaries of lawn care chores...what you did, and when you did it - weekly, monthly, seasonally. And don't forget to take some "Before and After" photos - especially if you are converting from a chemical program to an organic program.

A lawn journal gives you your own "Lawn History" and is a great tool for fine-tuning your own lawn-care program. Weather conditions, soil conditions, disease or insect problems that arise, control measures taken, mowing techniques/schedule are worth noting, so that you can plan accordingly to make your lawn care program the most effective.



## ***Natural Stress Signs***

**Winter:** Strange as it may seem, despite the grass plants being dormant in the winter, they are still alive and functioning. When you see ice forming on the tips of the grass, that's evidence of the respiration that continues to go on. The ice cuts off the plants supply of oxygen and can cause damage by suffocating the grass. Deep freezes, especially in the early spring when plants begin to break dormancy, can also cause significant damage. Snow is less damaging than ice. It protects grass from drying winds and from the extreme cold. Snow cover will also keep the frost from going as deeply into the ground as it otherwise would, which means that the ground will thaw and drain earlier in the spring. A dry winter, with no snow cover, brings its own problems - especially if it is followed by a dry spring.

**Frost damage:** appears as a blackening of the leaves, which gradually turns to a brown or tan. Spring frost damage will normally recover after two to four mowings. **Prevention:** STAY OFF THE GRASS until all frost has melted.

**Desiccation:** is a major cause of winterkill. Desiccation is usually more severe on elevated areas, sites exposed to excessive drying winds, or areas where surface water run-off is high. Typically, leaves are a distinct white and remain erect in high dry areas. **Prevention:** perform no late core aerations and do not leave holes open. Deep-rooted organic lawns maintain their moisture levels better, avoiding winter drought.

**Snow mold:** is a collective term for winter diseases caused by cold-loving fungal species. There are two types of snow mold that may occur: Gray snow mold (*Typhula blight*) and Pink snow mold (*Fusarium patch*). During the wet, cold weather of early spring, snow mold may be highly visible as matted, crusty looking areas. As conditions dry out, snow mold will gradually disappear but infected areas may remain in the form of weak, or even, dead turf. Conditions, which may contribute to snow mold, include excessive use of fast-release (water soluble) nitrogen fertilizer in early to mid fall, excessive thatch, excessive shade, poor drainage, and excessive debris (such as leaves or straw) on the turf. Areas receiving drifting snow or piles of deposited snow are also prone to snow mold. **Prevention:** follow the organic Simple Steps program to manage fertilization properly

**Summer:** Drought is the biggest stress in the summer, but right behind it comes "scalping" or cutting your grass too short. The two are related in that you can *prevent* the worst of a drought's effects by mowing high all summer. Taller



grass can actually cool itself down by as much as 7 to 20 degrees F. Read more in the "Mowing" and "Watering" sections.

How does your lawn look this season? Look around, take notes and then take a little time to do a bit of reading. Take a look at the book list at the end of these notes and spend some time researching what lawn diseases look like. Many of the books have excellent photographs. Again, make note of it in your new "Lawn Journal!"



## ***Soil Test***

An organic lawn care program is essentially a soil care program...healthy soil means healthy grass. Just as you wouldn't fill a prescription without a doctor's approval, you don't want to be "doctoring" your soil without some expert advice on what it may or may not need.

**Test your soil!** Take your soil samples from your lawn **BEFORE** you do any soil amendments (including compost/organic fertilizer). Take about 10 samples from different areas in your lawn, digging down (use a **CLEAN** soil probe, or trowel) 3-6 inches. Mix it up in a clean plastic bag...you'll want about a cup to send off. Let it air-dry a bit on a pie plate - **NOT** in the oven! We recommend you send it **OVERNIGHT Next Day Post**.

A basic soil test is available from UMass - see their website [www.umass.edu/plsoils/soiltest](http://www.umass.edu/plsoils/soiltest). Paul Sachs recommends A & L Eastern Agricultural Laboratories [www.al-labs-eastern.com](http://www.al-labs-eastern.com) Copies of both soil tests are available at the hand-outs table.

Be sure you mention on the form that you want **Recommendations for ORGANIC LAWN CARE**. We also recommend you ask for the **Standard Soil Test, Plus Organic Matter** - it's only another \$2.00 on the UMass test.

The soil test is well worth your investment of time and money. You'll learn so much about your soil so that you won't be wasting money on amendments you don't need. If you do this now, you'll still have time to get whatever you may need for spring application - Lime - Compost - Organic Fertilizer - Rock minerals. New England soils are often deficient in both phosphorous and potassium- both very important for vital root growth.



## ***Notes on what a soil test will tell you:***

**pH:** Most turf varieties do best in a soil pH of 6.5 -7.0. A low pH (<7) means acidic soil (add granulated Calcitic Lime). A high pH (>7) indicates an alkaline soil (add Gardener's Sulfur -but get expert advice as it is easy to over-do sulfur and burn the grass).

**Calcium-Magnesium:** The latest in soil science indicates that this is an important thing to look for on your soil test results. The Cal-Mag ratio has a lot to do with "locking up" your soil and your lawn won't thrive if this is out of balance.

Ideally, the Calcium to Magnesium Ratio should be a minimum of 7/8 (Cal) to 1 (Mag) and some recommendations are even calling for a ratio of 10-1. Adjust your Cal-Mag levels with Calcitic Limestone.

If you need to raise the pH, and you need to build up your calcium levels, use Calcitic Lime.

If your pH is OK, but you still need to improve your Cal-Mag ratio, gypsum (a rock powder) is recommended.

**Nitrogen (N)** is for greening and growth. Excess Nitrogen from lawn fertilizers is the single biggest contributor to the problem of run-off, polluting our waterways, promoting overgrowth of algae, which in turn contributes to fish-kills, and the take-over of invasive species in ponds and lakes - leading to the call for *more* chemicals to "fix" the problem! Excess nitrogen also promotes certain lawn diseases, alters pH, triggers insect problems (they are attracted to the succulent, lush forced growth), stresses the grass plant and leads to weaker turf.

**SOIL TEST AND UNDERSTAND HOW NITROGEN WORKS IN A LAWN BEFORE YOU APPLY ANY.**

Lawn Clippings contain 58 percent of the nitrogen from applied fertilizers and you can recycle it back into your lawn by leaving them on the lawn. **CLIPPINGS DO NOT CAUSE THATCH!** Clippings help keep the turf green, improve soil conditions, and provide disease suppression, thatch reduction, crabgrass suppression and reduced need for more nitrogen.

Potassium (K) is the Vitamin C of the plant nutrient system, a disease and stress fighter.

**Organic Matter (OM):** Most soil tests come back 3-6%; Experts recommend 5-8%. In an organic garden, Organic Matter should be a good 8% of your soil's make-up. **COMPOST** is an excellent way to build up organic matter. It holds moisture and nutrient; provides habitat for micro-organisms; helps keep the soil more friable; breaks up hard-pan and thatch and provides disease and pathogen protection. Read more under "Compost".



### ***Amend Soil - Organic Fertilizers/Lime***

When your soil test results are back, then you are ready to **FEED YOUR SOIL** what it needs to promote healthy grass growth.

Use only **ORGANIC FERTILIZERS** to provide slow-release of nutrients that will help to build healthy roots and a "green-up" that will last over a longer period of time. But beware of "organic" claims. Read the label. Avoid non-natural ingredients like super-phosphate; harmful "natural ingredients" like "natural nitrite of soda" (causes salt build-up) and sewage sludge/biosolids (Milorganite is an example of a biosolid "organic" fertilizer)), which may contain harmful contaminants. At the Living Lawn, we are using North Country Organics **PRO-GRO**.

**Liming:** The pH of the soil is critical, right behind the Cal-Mag balance discussed earlier. Unless pH is correct, fertilizers will have relatively little effect. When the soil is too alkaline (above 7.0) or too acidic (pH below 6.5/6.0) a lot of the nutrients needed by your lawn are locked up and unavailable.

Soil test to determine your lawn's pH. If you need to lime, fall is the best time, but it can be done in early Spring. Most recommendations for New England soils call for use of **CALCITIC LIME** (in a granulated form to avoid dust inhalation) as our soils are often deficient in calcium/magnesium - key minerals to enhance the uptake of other nutrients by the grass as discussed above. Do not use dolomitic lime. If your soil is too alkaline, you need to add **GARDENERS' SULFUR**...but get some expert advice (UMass Extension) on this as it is easy to go overboard.



## **Seeding**

Fall is the best time to be re-seeding a lawn. (However, look under "Over-seeding/Patching" for what to do with bare spots in the Spring.) Plan to do major over-seeding in the early fall - late August through to mid-September for best results although, depending on the weather, you can continue to over-seed right through late fall.

**PURCHASE GOOD SEED** - and be generous when using it. Look for grass seed that contains natural **ENDOPHYTES** - this provides a natural insecticide to the grass blades. In fact, it has been found that the **single most effective grub control for turf is to use endophytic grass seed**. Most tall fescues and perennial ryegrass seeds are now endophytically-enhanced. Read the label.

**Note:** Endophytic grass is not good for grazing animals (sheep, goats, horses) -but is OK if your cat, dog, bunny occasionally has a mouthful. But it tastes bad to grazers so they usually don't eat much anyway!

The "Living Lawn" has four turf plots, now beginning their sixth season of growth. We originally planted four different brands of grass seed; however, we usually over-seed with either North Country Organic Eco-Blend or Gardens Alive! Turf Alive III. When you enter the garden, facing the octagonal flowerbed in the center, the types of grass seed we planted in each plot originally are as follows:

- **TURF BED #1** (front right hand side) - **NORTH COUNTRY ORGANICS ECO-BLEND**. Endophytic. Available at Osborne's. or [www.norganics.com](http://www.norganics.com) (North Country Organics).
- **TURF BED #2** (front left hand side) - **HART'S COASTAL MIX** Chas. C. Hart Co. 1-800-326-4278 (Advertised to "grow in adverse conditions, with excellent tolerance to salt, shade and drought).
- **TURF BED #3** (rear left hand side) - **GARDENS' ALIVE TURF ALIVE III BLEND**. Endophytic. By catalog (812) 537-8651 or [www.gardensalive.com](http://www.gardensalive.com)
- **TURF BED #4** (rear right hand side) - **ESSEX COUNTY CO-OP'S NE MIX #2** (Middleton - 978-887-2300)



## ***Over-seeding/Patching***

Again, fall is the best time to do this, but certainly be sure to over-seed/patch any bare spots in the Spring as well to keep developing a thick, dense turf and out-compete the weeds. If necessary, aerate and de-thatch first. Weed the areas as much as possible. Rake vigorously to loosen the soil and create little valleys from the rake tines for seed to sit in. Apply soil amendments according to test results. Apply seed generously. Cover lightly with compost or topsoil. Tamp it down. Keep it moist during germination and until well-established.



## ***Aerating/De-Thatching***

**Aerate:** Is your soil compacted from heavy traffic or high clay content? Heavily thatched? Healthy soil needs oxygen in order to promote healthy root development. Soil is made up of **25% air** (25% water, 45% minerals and 5% organic matter). Aerating your lawn helps nutrients and water get down to where they are needed. However, it is important to know that while compaction is a problem, so is disturbing the microbial life in the soil with rototillers, etc. **AERATE ONLY IF NECESSARY.** Raking hard by hand is one form of aerating. So is the use of a reel aerator...or a power aerator.

**Earthworms:** The ideal way to aerate is to let Nature do it...so once you have established a healthy earthworm and microbial life population in your soil, you'll be able to forget about aeration! Earthworms thrive on organic matter (including lawn clippings and thatch), and dig deep and extensive tunnels that air and water can travel through. They also exude plant growth hormones in their "slime" - an added benefit for your grass. Some pesticides have been found to kill 60-90% of the earthworms in soil - a terrible loss that will be reflected in your lawn's health.

**Remove thatch.** Thatch build-up encourages every lawn problem. Thatch is a build-up of dead grass roots, stems and leaves. **LAWN CLIPPINGS DO NOT CAUSE THATCH!!** (See "Mowing" section for more on the benefits of lawn clippings.) In a healthy lawn, earthworms and soil microorganisms break down the clippings and thatch naturally. A chemically-treated lawn upsets the natural balance in the soil and promotes excess thatch. Faulty watering practices (frequent, shallow watering) also causes thatch as does excessive fertilizing.

A BIT OF THATCH IS NORMAL AND OK. If thatch is thicker than  $\frac{1}{2}$  inch it can cause some of the worst lawn problems - creates a breeding ground for insects; prevents water from penetrating and promotes disease; eats up your fertilizers and prevents nutrients from reaching down into soil and roots.

**How to tell if you have too much thatch?** Stick your finger down between your grass blades....you may push through a thin layer of tangled root stolons but then touch the soil....that's an OK amount of thatch. If you cannot feel the soil, there's probably too much thatch.

**What to do? Stop using pesticides.. De-thatch.** You may want to hire a power de-thatcher - but beware, it's easy to go over-board with these machines and they can damage the soil and really tear up your lawn. Or use a push reel aerator (good only for small lawns and most effective on slightly moist soil).

**And be sure to Top-Dress with Compost.** The microbial life in compost helps de-thatch a lawn; and there are some organic liquid de-thatching products (essentially liquid compost) now on the market as well. You could also try "seeding" your lawn with earthworms (see [www.wormdigest.org](http://www.wormdigest.org) or [www.ctvalley.com](http://www.ctvalley.com) for everything you ever wanted to know about worms!) - but be sure to do this to a wet lawn and at the same time you are adding compost if your organic matter is low.



### **Mowing**

Avoid stressing your lawn by poor mowing practices. It should still look green rather than gray/brown after you have mown. Don't cut off all that color when you mow!

**Sharpen Your Mowing Blades:** More problems are caused by improper mowing than by any other cultural practice - and SHARP BLADES ARE VITAL! If your mower blades are dull, the lawn will have a grayish cast a day or so after mowing. This happens when the leaf tips have been shredded instead of cut, thus turning brown. This is especially noticeable when the weather is dry. Besides being unsightly, shredded tips are an easy entry point for many disease organisms. Skipping this step is really self-defeating. **KEEP THOSE BLADES SHARP!** A local source for sharpening is Ceramalogy Carbide at 59 Bridge Street in Salem (978-745-1248).

**Mowing Height:** Mowing high is key to drought tolerance - and good weed control. Taller grass can affect the temperature as much as 20 degrees, making a

"baking" during the dog days of summer. Taller grass also shades out weeds...they can't get a good start in a dense turf mown high.



## **SEASONAL MOWING HEIGHTS**

- **First spring mowing: set your blades low - at 2 inches to remove any over-wintering fungus. Dispose of these grass clippings - do not leave on the lawn! (This is the only time you should remove your clippings. )**
- **During the growing season: raise the height to 3 to 3.5 inches .**
- **KEEP IT HIGH THROUGHOUT THE SUMMER!**
- **In the fall, gradually reduce the height of your cut. This will allow sun in for grass-seed germination.**
- **Final cut in the fall should be 2 inches.**

**Mow frequently/Avoid "Scalping":** Do not cut off more than one-third of your grass blades at one time. (Use a marked stake in the ground to train your eye to what this looks like.) Cutting off more than one-third at a time stresses the grass plant and affects its ability to photosynthesize, which in turn affects root development. You can lose up to a month's root development and growth by one "scalping!" Results may not be immediately visible, but you are setting the scene for future problems.

**Lawn Clippings:** Mulching mowers are recommended - they leave practically microscopic lawn clippings on the lawn when you mow - a free source of Nitrogen.

Studies are showing more and more benefits from leaving lawn clippings on the grass:

- they can provide more than half the nitrogen your lawn needs - and in a good organic form the plant can use;
- grass color improves;
- significant crabgrass reduction;
- some perennial weed reduction; and
- disease suppression

**Mowers:** Make sure the settings allow for HIGH MOWING. We have used both a push reel mower (Scott's Classic - approx. \$129 at Sears/Home Depot) and an electric mulching mower (Black & Decker - \$245 at Home Depot) at the Living Lawn. We now have the grass cut by a landscaper who uses a gas-powered mulching mower.





## **Weeds**

### ***DENSE TURF, MOWN HIGH IS THE BEST "HERBICIDE."***

There is no such thing as a healthy, *weed-free* lawn! A weed is nothing more than a misplaced plant. However, most of us don't want too many of them in our lawns. Weeds have their uses. Nature sends them to fill a vacuum and stop erosion, or to provide needed nutrients. Monocultures are also more prone to problems...so a few weeds are not totally unwelcome. Determine your own weed tolerance. Weeds move in where grass can't thrive.

If you have an excess of weeds in your lawn, you need to find out the reason why they are doing well and the grass is doing poorly. Grass is a very aggressive plant and once established it can out-compete weeds if you follow good turf management techniques. Improper mowing, watering, and over-fertilizing, and the use of pesticides, are the chief culprits in weeds becoming a problem in turf. There is also the "naturalization" factor from surrounding areas that may be heavily-weeded. Seeds travel!

**Soil indicators:** Weeds can be "messengers", telling us something about the nature of the soil they are thriving in and thereby helping us figure out how to adjust our soil to better favor turf establishment. See hand-out for some common weeds and what they indicate.

**"Misplaced wildflowers":** A few notes on some so-called "weeds" :

- **Clover** - nitrogen-fixing legume family; sometimes turns up by itself, sometimes included in grass seed now as it is recognized as beneficial to your soil, fixing Nitrogen in the soil. Notice that the grass around clover is usually noticeably greener. But maybe you have too much clover in your lawn...or maybe you just don't like it. Figure out what can you tolerate - dig up rest and over-seed heavily. Keep at it until the dense turf chokes it out as much as possible. (Note: Bees like clover flowers so in order to avoid any bee problems in your lawn, simply be sure to mow the clover so that it doesn't flower);

Alternatively, if you want to get rid of some of it, you can put down an organic 10-0-0 Nitrogen only on the clover...too much Nitrogen will weaken the plant. Then you can over-seed heavily in those patches. Concentrated citric acid is emerging as a possible control for too much



you can put down compost and re-seed the next day.

- **Dandelions:** Also beneficial, as the long tap root brings micronutrients from deep in the soil up to the grass roots. **Mow high** - they'll be **substantially reduced and choked out** this way by the dense turf that **out-competes** them. In the spring you can apply corn gluten, if not re-seeding. Hand dig out as much as possible - weakens the plant even if you don't get the whole root. We recommend the Weed-Hound for this.
- **Violets:** One person's weed is another person's wildflower....These prefer shade and cool, moist fertile soils. If you really *must* rid your lawn of these flowers, mow low (in the violet patch), improve drainage, reduce irrigation and aerate.
- **Crabgrass** -An annual weed that Nature uses for erosion control it will fill in any bare spots in your lawn. **Crabgrass likes dry sunny conditions** - so once again if you are mowing high you will shade it out and it can't sprout.

Crabgrass dies after the first or second killing frost, leaving unsightly bare patches. It sends out thousands of seeds (one plant may produce as many as 50,000 seeds!) that lay dormant over winter waiting for the right amounts of light, temperature and moisture to sprout (usually ideal conditions for it are in mid-late April).

It generally stops sprouting after mid-August (19<sup>th</sup> or so) when there are not enough hours of sunshine as the days lengthen. If you are attending to your soil's fertility with compost and organic fertilizer you are making your soil inhospitable to crabgrass. Crabgrass likes high N - so the synthetic fertilizers contribute to it. Organic fertilizers are not as high in N and are slow-release.

**IF YOUR LAWN IS SERIOUSLY OVERTAKEN WITH 50% or more CRABGRASS AND OTHER ANNUAL WEEDS**, it may be necessary to plow the lawn under and sow a new lawn in the Fall - and follow with the Simple Steps Organic Lawn Care Program. For smaller patches, dig out what you can and over-seed heavily in the fall.



## **Weed control**

In an organic program, prevention is better than the cure for weed management; however, there are some techniques and products that can help out while you work on establishing dense turf that will keep weeds in their place.

**Manual weed removal:** Hand-weeding is therapeutic (well, we think so!) - and an effective way to remove broadleaf weeds especially. Even when you don't get the entire root/plant, you have done enough damage to weaken it, which gives the aggressive grass plants a chance to take over. We like the Weed Hound (\$19 at most garden centers) - very effective for broad-leaved weeds like dandelions and plantain. Dig out larger patches of clover or crab grass as much as possible.

**Corn Gluten:** is a natural, non-toxic pre-emergent herbicide derived from corn proteins. It inhibits the root development on the germinating seeds of crabgrass, dandelion and many other common lawn weeds. It also adds slow-release nitrogen to the soil (adjust your fertility program by about 10% if you use it). In fact, if your lawn fertility is in the ball-park of the optimum range, a springtime application of corn gluten for pre-emergent weed-control, can replace your spring fertilizer.

**Note:** Corn gluten will also stop grass seed from sprouting - so do not apply it at the same time as over-seeding. Experts say anywhere from 3/6 months are needed in-between corn gluten/grass seed applications. Corn Gluten has become increasingly more available and cheaper. You will also find that you only need to apply it occasionally - until you establish the dense thick turf that will choke out most weeds. New research shows that the best results are obtained when used for three consecutive growing seasons - spring-fall-spring.

But timing is critical. **Spring:** Experts say during the third week in April, before April 21<sup>st</sup>, while the forsythia is in bloom. Some say when the crocuses are in bud! It depends on the weather and how fast the soil/daytime temperatures are warming up. You want to get it down before the weeds begin to emerge. **Fall:** apply late August/early September to take care of any un-germinated crabgrass seed in the soil - but only if you are not over-seeding. (Generally, we encourage re-seeding in the fall rather than corn gluten applications since establishing dense turf is the goal for the most effective weed control.) Once your lawn is well-established, the corn gluten is a good tool to stop any emerging weeds from getting in, spring and/or fall.

... corn gluten by drop spreader. water it in lightly. (And remember, it is a grain product, so try to use it all up. You can use it in your garden beds as well as long as you are not putting in seeds. Otherwise be sure to store it in rodent-proof containers.)

Note: Organic lawn care certification programs do NOT allow the use of any GMO (genetically-modified organisms). Unfortunately, there is not yet an ORGANIC corn gluten product available that we are aware of. Corn gluten is not necessary for maintenance of an established organic turf. Only you can decide if your lawn might need it during the transition period.



### *Top Dress with Compost*

The microbial life in the soil is KEY to a healthy lawn. A healthy soil is "biologically active", containing a complex food web ranging from the microscopic, to earthworms, to beetles. There are millions of organisms in a just a teaspoon of healthy soil, all of which do a tremendous amount of inter-acting that benefits plant life. Check out the website [www.soilfoodweb.com](http://www.soilfoodweb.com) for more information on compost and healthy soil. Paul Sachs says, "the use of chemical pesticides is like throwing a wrench into the working gears of this complex food web."

Compost is an excellent source of micro-organisms and the organic matter they feed on. Organic matter acts as the major energy source for plant life.

Many turf problems associated with stressed lawns are mitigated or disappear when compost is used. Research into compost is finding that bacteria, enzymes and other "unknowns" in the soil act as "soil guardians," protecting plants growing in it from disease and insect damage. It even acts as a weed inhibitor. Fertility and tilth of soil improve immeasurably when there is a healthy level of organic matter. And nitrogen in compost is more readily available to the grass through a biological process which converts it into protein which will not leach or volatilize into atmosphere. It is used by the plant instead.

MPAC encourages everyone to make their own compost! See reference books to read up on the "how-to" of home composting. You do need to be wary of using unfinished compost as that can do more harm than good. Be sure your home-grown stuff has stopped "cooking"...and is richly dark, and almost odorless.

You can also play it safe by buying bagged organic compost, which is made to a recipe. However, beware of "organic" claims. Read labels. Avoid non-natural

ingredients and any product containing Milorganite, (Milorganite is one of these.) The brand we use at the Living Lawn is McEnroe's. Other good brands are Vermont Compost and Coast of Maine. Compost is not a substitute for organic fertilizer; you use it in conjunction with whatever fertility program your soil test indicates. Compost, like organic fertilizer, is a method of nourishing the soil and its microbial life, so that the soil may in turn supply the plant with the nutrients it needs. As the soil profile begins to reach desired levels, compost can be applied in lieu of an organic fertilizer application and nutrient levels will be maintained.

**How to:** The simplest way for small to medium lawns is to empty the bag into a wheelbarrow and broadcast it with a shovel. You only want about  $\frac{1}{4}$  inch down at a time. Rake it to spread around. It will breakdown in about a week. You can also use a spreader, usually open to widest setting. And some companies are now selling spreaders designed specifically for spreading compost.



### ***A Word on Town Compost***

The Board of Health is working to make the town's compost more easily available to homeowners. It has been tested three years in a row now at the request of MPAC and has come up "clean" for pesticides. The Board of Health has agreed to test it each year as part of their Organic Pest Management (OPM) policy for town-owned land. We urge everyone to encourage the Board of Health to further improve the quality and availability of our Town compost and to check with them the status of testing.

**If you are interested in the idea of a citizens' COMPOST COMMITTEE to improve and promote Town Compost, please let us know of your interest. Sign up at the hands-out table, or call 781-631-7214.**



### ***Watering***

Organic lawns are drought-tolerant and can help you conserve water. The goal of all organic lawns is to let Nature provide the lawn's water needs; to develop deep root systems so the grass is drought resistant; and to keep it mown high to prevent burning.

The *Living Lawn* does have an in-ground sprinkler system. We needed it to establish the new lawn in the beginning. (keeping seed moist is key to good germination), especially as we planted it during a drought summer. Now that the lawn is well-established we do not use the irrigation system except in special cases. During the drought summer of 2002, the *Living Lawn* did beautifully throughout the drought and high heat, staying green right into mid-August. We then turned on the irrigation for one week

Irrigation systems can serve a purpose, but they can also cause problems and need to be monitored and maintained by a knowledgeable and reliable firm. If you have an irrigation system, make sure it has a rain gauge on it to stop it from going on during a rain. Too much water can cause just as many problems as too little water.

If you must water, remember there is no one rule.... your lawn's water needs are site specific (soil type/drainage/sun/shade).

However, a general recommendation is to always water in the early a.m. and water to a depth of **TWO INCHES PER WEEK - in split applications - ONE INCH AT EACH WATERING**. Light watering every day is a waste of water; it encourages thatch, weeds, and can promote disease - and is expensive!

To determine how long to run your sprinkler to drop one inch of water, use the old **TUNA FISH CAN MEASURING METHOD**. Place a few under your sprinklers in various spots on the lawn. See how long it takes to put 1 inch into the can. This is the length of time your sprinkler system has to run during **EACH APPLICATION** to provide 1" of water to your lawn at a time.



## **Diseases**

Fortunately, diseases in organic lawns are seldom allowed by Nature to get out of control - because the lawn is growing in a healthy, microbially-rich and biologically diverse ecosystem that usually won't allow one organism (fungus or bacterium) to take over.

However, in a transition lawn or a chemically-treated lawn disease *can* take hold. Studies out of Cornell University warn that soils with low organic matter managed by chemical pesticides are much more susceptible to devastating turf diseases.

Some diseases prefer hot, wet conditions - some prefer cool, wet conditions. Be careful of your watering techniques, especially if you have an in-ground sprinkler system. There are some natural fungicidal products now coming on the market. And remember, compost is proving to have some natural disease-suppressant properties it imparts to the soil.

Read more about lawn diseases in Taylor's Guide Books on Organic Lawn Care and The Chemical Free Lawn by Warren Schultz.

**Stress-X** is a seaweed extract product (as is Neptune's Harvest Seaweed/Fish Emulsion) that can be used as a disease remedy along with compost.



## ***Insects***

Again, an organic lawn with proper pH and a healthy root system, growing in a bio-diverse soil full of beneficial organisms, can control the thresholds of insect populations. It's when things are out of balance that one or another type of insect can dominate and cause damage.

Please remember that there are many **GOOD BUGS** out there that do a tremendous amount of the work for you in maintaining the health of your turf. Indiscriminate killing of insects is usually based on ignorance/fear...and your lawn and garden can suffer.

Encouraging bio-diversity in your landscape is your best defense against too much of one type of insect that might cause a problem.

The beneficials - earthworms, big-eyed bugs, green lacewings; ladybugs, spiders, dragonflies, birds, bats, hummingbirds, toads and frogs to name a few - are all adversely impacted by the use of pesticides. If you kill off these beneficials, you are leaving the door wide open for problems to occur.

**Grubs:** The larval stage of various beetles, usually Asiatic, Oriental, European chafer, and Japanese beetles. **Signs of grubs:** Brown patches that you can roll the grass right off of (as it's been severed at the root system by the grubs). Crows, starlings, raccoons, or skunks may feast on grubs (and get rid of them for you) by digging up your lawn, which is another tell-tale sign. Some people just let these "helpers" get on with it and then patch up the damage.

4-6 inches deep) and count the number of grubs you see when you turn it over - more than 8 and you may want to treat your law - organically!.

But note: experts are now finding that most grub damage is done by the masked chafer. The adult beetle feeds at night so unless you check this by flashlight you may not get a true picture of what is causing the damage.



## ***Insect Management***

**Preventative and active control measures against most of the turf-damaging insects include:**

- **use endophytically-enhanced grass seed** - naturally insecticidal. Has a bitter taste that grubs just don't like!
- **encourage beneficials into your landscape-** They consume a lot of bugs!!! Do this by bordering your lawn and filling your landscape with flowers, herbs, shrubs, birdbaths. Beneficial insects can also be purchased and released on your property.
- **apply beneficial nematodes.** These need to be applied during the correct life-cycle of the grub - when the grub is most receptive to infestation by the nematode. Apply in May or August, when grubs are in early larval stages (not large) - prior to mid-September. **Application:** must be applied **EARLY MORNING OR LATE EVENING** when intensity of lethal (to nematodes) sunlight is minimal. **APPLY TO IRRIGATED SOIL AND DO NOT ALLOW TO DRY OUT AFTER APPLICATION** -keep an eye on the weather for a week or so and water accordingly. Good for flower/veg beds too.
- **Check what strain of nematode you are buying** - there are many. Two types usually recommended are: **Heterorhabditis bp** is a hunter and seeks out grubs by following their trail. It is effective against the Japanese beetle/May/June beetles/No. masked chafer and others. **Steinernema carpocapsae** is a "sit and wait" or ambush forager type attaching to passing grubs. Most effective against highly mobile surface-adapted insects like webworms, cutworms, armyworms, girdlers, and woodborers. **Steinernema glaseri** is another such type. Sometimes nematode products will offer a mix.



- Available by catalog or from some garden centers (or get a special order for you - you don't want to buy any that have been sitting on a store shelf - they'll be dead!). Prices are quite varied, so shop around.
- **Milky Spore:** Current expert thought is now divided over its efficacy as a viable agent to effectively control the Japanese beetle.

While the controversy goes on, and since experts tell us the Japanese beetle is currently NOT a major pest in lawns and landscapes (due to cyclical nature of populations of species), the *Simple Steps* program recommends all of the above steps for prevention and control of grubs - but favors nematodes over Milky Spore as a treatment, if necessary.

If you choose to use Milky Spore, here's what you need to know: Milky spore is a bacterium ingested by the grub that causes death. The bacteria reproduce inside the remains of the grub and increase the inoculation of the area. It can start working right away, but takes time to spread by infecting and then multiplying. After a few years the spread of the disease (Milky Spore Disease) is thought to be sufficient to keep the population of Japanese beetle larvae at a tolerable level for the turf. Best time to apply is mid to late summer, but it can basically be put down anytime during warm weather. Now available in a granular form that can be used in spreaders. Water it in lightly. Becomes active when grubs digest it when soil temps are in the mid 60's.



## Resources

The above information has been gathered from a wide array of resources, (books and websites), including, but not limited to:

**Rodale's Organic Gardening Basics: Lawns/Soil/Compost/Pests**  
**Handbook of Successful Ecological Lawn Care** by Paul Sachs  
**Edaphos: Dynamics of a Natural Soil System** by Paul Sachs  
**Organic Gardening** by Maria Rodale  
**The Chemical-Free Lawn** by Warren Schultz  
**Build a Healthy Lawn** by Stuart Franklin  
**The Everything Lawn Care Book** by Douglas Green  
**All About Lawns** by Ortho (ignore chemical pesticide recommendations!)  
**Taylor's Guide to Safe and Easy Lawn Care**



**Taylor's Guide to Organic Pest & Disease Control**  
**The Organic Gardener's Handbook of Natural Insect & Disease Control by**  
**Barbara W. Ellis and Fern Marshall Bradley**  
**Easy Compost - from the Brooklyn Botanic Garden**  
**The Rodale Book of Composting**  
**NOFA/MASS. & CT. Organic Land Management Project**  
**Ecological Landscaping Association Handbook**



***Good websites***

**The Google search engine ([www.google.com](http://www.google.com))  
brings up thousands of websites on all of the information discussed in these  
notes. Just be sure to check out the **LOCALITY** of the website, so that the  
growing information is appropriate to our area.**

**[www.livinglawn.org](http://www.livinglawn.org)** (under construction - should be ready end April)  
**[www.ci.wellesley.ma.us/nrc/pesticide](http://www.ci.wellesley.ma.us/nrc/pesticide)** - for MA pesticide info  
**[www.organiclandscape.org](http://www.organiclandscape.org)** (Canadian)  
**[www.simplegiftsfarm.com](http://www.simplegiftsfarm.com)**  
**[www.grassrootsinfo.org](http://www.grassrootsinfo.org)** (New York)  
**[www.weedalert.com](http://www.weedalert.com)** -weed images for I.D.  
**[www.rce.rutgers.edu/weeds](http://www.rce.rutgers.edu/weeds)** - weed images for I.D.  
**[www.nofa.org](http://www.nofa.org)** - Northeast Organic Farming Association (go to NOFA-Mass link  
for Organic Land Care Committee and information on Certified Organic  
Landscapers and Lawn Care Professionals).  
**[www.leevalley.com](http://www.leevalley.com)** - great gardening/tool catalog - good prices  
**[www.gardensalive.com](http://www.gardensalive.com)** - organic soil and pest control products and grass seed  
**[www.mass.gov/dep](http://www.mass.gov/dep)** - for Home Composting Workshops in MA: Contact Ann  
McGovern, Consumer Waste Reduction Coordinator, Dept. of Environmental  
Protection, One Winter St., 9th Fl., Boston, MA 02108 -(617)292-5834 tel. -  
(617)292-5778 fax



***LAST BUT NOT LEAST***

**The Living Lawn Project is in need of a Steering Committee to ensure its  
healthy future as a resource for Marbleheaders interested in organic lawn and  
garden care. If you would like to be part of this team- and no organic  
experience is necessary - please let us know.**

